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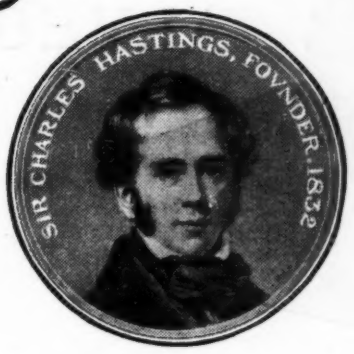

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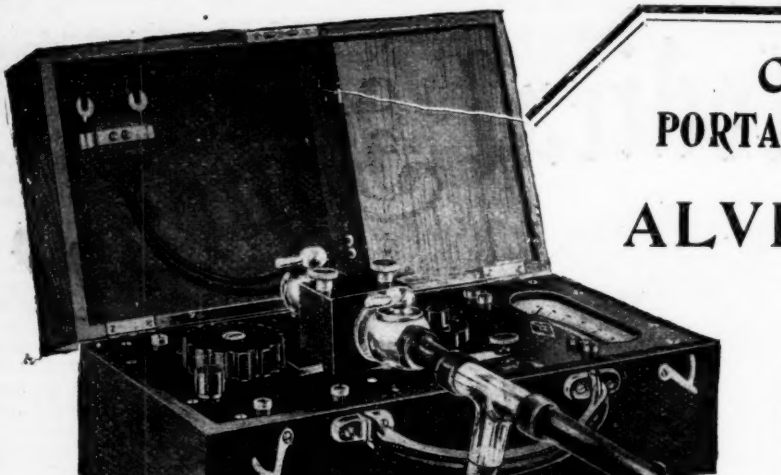

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A Clinical Lecture
ON
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BY
F. JOHN POYNTON, M.D., F.R.C.P.LOND.,
PHYSICIAN TO THE HOSPITAL, AND TO UNIVERSITY COLLEGE HOSPITAL.

In this lecture I will consider a question which I believe to be at present the most practical in the whole range of the study of heart disease—the possibility of preventive measures. Curative treatment for the moment is almost at a standstill. Cardiac tonics have been studied with the greatest industry; we are not likely to learn more of the value of the salicylates in heart disease than we do now, and serums and vaccines are not yet effective.

There is, however, another line of attack, opened up by recognition of the fact that, excluding congenital affections, the major part of the heart disease we meet with in the young is infective in its origin. These infections may attack the whole heart, or predominantly the valves, pericardium, or myocardium. Their relative frequency in the young is very different. Some are rare—for example, the tuberculous. Others vary in relation with epidemic waves—the diphtherial, the influenzal, and that associated with scarlet fever. Pneumococcal and staphylococcal cases are unusual in this hospital, as also the syphilitic, but rheumatic heart disease is very frequent and very constant in its occurrence. This is particularly the case in London, and it is with London I shall be dealing. At this hospital we only see children up to 12 years of age, and many cases, it is known, occur between that age and 15, so that not even here do we get a complete picture of the frequency of rheumatic heart disease in the young.

The Gravity of Rheumatic Heart Disease.

It is possible to give a clear idea of the havoc acute rheumatism causes in childhood, because in 1919-20 we had a bad outbreak, and with Dr. J. C. Spence and Dr. D. Paterson I made an analysis of the cases.

We have 100 medical beds, and these are for practical purposes almost always fully occupied. The average stay of a medical case is twenty-eight days, and the cost of each child £2 9s. a week. The number of cases of rheumatism admitted in the year 1919-20 was 172, and if they are imagined as one long case it would have occupied a bed in the hospital for twenty-nine years; or putting it in another way, all our medical beds (100) would have been filled for fifteen weeks. The average stay of each case instead of twenty-eight days was sixty, and in maintenance the outbreak cost the hospital £4,589. This expenditure is, after all, the least serious result. What arrests attention is that 66 per cent. of these children had signs of organic disease of the heart, 22 cases died, and 38 became complete invalids. Undoubtedly this was an outbreak of unusual severity, but each year we have many cases, and in every London hospital where children are admitted in any numbers there is the same story.

If we study the age incidence we are struck by the early commencement of the heart disease. In this attack the limits were 2 years and 12 years, which is our age limit; thirty examples of first attacks occurred at the age of 7. As soon as the school age is reached we find a steady increase in the frequency of incidence.

On the other hand, acute rheumatism is infrequent among children, of school age, of parents who are in better circumstances than the hospital class.

Cardinal Pathological Facts.

There are some points on the pathological side of infective heart disease which are simple but yet outstanding. If the poisons attack the noble tissues—the muscles and nerves of the heart—these cannot be replaced if destroyed, and if they are partially damaged can only recover completely if that damage be slight. When the fibrous tissues of the heart's framework, the valves and the pericardium, are attacked and destroyed they are replaced by scar tissue, and if they are the seat of prolonged irritation short of destruction they thicken and contract, sometimes shutting in small areas of necrotic tissue. There are two problems before us at the bedside; one, What evidence is there of active infection? the other, To what extent are the symptoms the result of scars due to healed lesions? With these two problems in mind we rapidly come to the conclusion that in the young some degree of active infection is almost constant. It is an axiom that the chief cause for a cardiac breakdown in a child is active—I do not say fresh—infection.

Diphtheria when virulent kills the noble tissues but does not produce scarring. Contrast with this a chronic relapsing rheumatic pericarditis, where as a result a grossly thickened pericardium is densely adherent to the heart and possibly to the surrounding tissues; a still more striking example of this type of change is seen in chronic tuberculous pericarditis, which may literally strangle the heart in its grip.

Here, then, we have two extreme examples: on the one hand the destruction of the noble tissues, and on the other scarring of the fibrous tissues; but in rheumatism we frequently see a certain grade of damage produced in both—there is myocardial weakness and scarring of the valves. I do not think we can ever get a real grasp of the problem of prevention unless we keep these two classes of injury before our mind, for it is injury to the muscle of the heart which particularly calls for prolonged supervision in convalescence, and the scarred valves disturb the work of the heart as a mechanical pump.

Diphtheria under Control.

When we consider diphtheria—dangerous though the cardiac infection is—we recognize that it is a contagious and notifiable disease due to an accepted microbic infection. It is a disease on the whole as well under control and supervision as we can expect in a great community. Methods for detection and for treatment may no doubt advance, but already there is general recognition of the importance of careful supervision of the heart. It is, for example, well known that dangerous symptoms are particularly likely to develop in the third to the fifth weeks, with exceptions at either limit, and we recognize that most of the tragedies occur in cases in which the nature of the infection has not been recognized and the child for that reason has escaped from supervision. These missed cases must always occur in human endeavour, and in no way alter the fact that heart disease due to diphtheria is well supervised. Tuberculous heart disease is so uncommon in this country that though we recognize it in children's hospitals it bears no relation in frequency to other tuberculous lesions, and great efforts are, we know, made to keep tuberculosis under supervision.

Scarlet fever stands in the same category as diphtheria, for it is notifiable, and every effort is made to get the cases under supervision, but much of the heart disease connected with scarlet fever has, in my experience, arisen after the child has left the fever hospital, and it must be considered in the main under the same heading as rheumatic heart disease, to which I now come.

Rheumatic Heart Disease.

We are now confronted with some obvious difficulties. Acute rheumatism is not notifiable, and I am not prepared to advocate that it should be at the present juncture. The cause of acute rheumatism is still under dispute. Many consider the problem unsolved and the infection unknown; some look upon rheumatism as non-infective, though likely to be complicated by infections which determine the manifestation, and some believe with me that it is a definite infection and a definite disease. Whatever view we may take we shall do well, in my opinion, to look upon rheumatic heart disease as infective, for it behaves in every way like an infective lesion. It is not necessary for the purpose of prevention to commit ourselves to a specific infection, for the moment that rheumatism is admitted to be an infective process the importance of prevention is manifest.

Prevention Often Can be Only Partial.

Unfortunately the prevention of rheumatic heart disease can be attained only in a modified degree, for frequently the patient has already been damaged, and the most we can do

then is to stave off further attacks. This limitation it is essential to recognize, for at present we are unable to control rheumatic heart disease with any certainty. Some may demur at this and point to the specific action of the salicylates, but the present history of rheumatic heart disease in childhood does not bring to me any conviction upon this point.

My views are humbler, and they rest upon the belief that there are some obviously weak points in our general management of rheumatic children which can be much improved. If this improvement is a practical undertaking we shall, I hold, prevent much severe heart disease and many deaths from that cause, and further make many lives more useful to the State and much happier for the individuals. I believe also that with improvement we shall incidentally learn more of the life history of infective heart disease, and very probably in the future discover as a result valuable data which may lead to further advances. It must be remembered that year by year ceaseless investigation is in progress throughout the world of medicine, which may at any moment lead to some new discovery in therapeutics.

Defects in Management of Heart Disease in Childhood.

I shall now attempt to justify the main theme of the lecture by referring to what appear to me the weak points in our present management of heart disease in childhood.

1. *Imperfection in Medical Education.*

The first point concerns our own profession. There seems to me some difficulty in the pathways of students who desire to gain a real clinical insight into the rheumatism of childhood, and I am speaking as a clinical teacher both at a general and at a special hospital.

Except in the largest general hospital there is no great opportunity for a student during his time in the wards to see many cases of acute rheumatic carditis, and yet there is no doubt that at this age rheumatic heart disease requires unusually careful observation. In the adult the later and closing chapters of heart disease are seen with their alarming and striking symptoms; in the child the detection of dilatation, of early endocarditis and pericarditis—that is, the dawn of heart disease—requires close attention and some special teaching. I believe it to be correct if I say that no one in this audience who has worked in a London children's hospital will deny that he left the hospital with a very much clearer idea of cardiac rheumatism.

Yet no one can appreciate the gravity and difficulties of the problems involved in the dawn of infective heart disease who has not a good clinical knowledge of rheumatism—not only cardiac rheumatism—in childhood. Recently this weak point has been strengthened by the greater attention paid to children's disorders in the final examination, and it will doubtless lead to general progress.

2. *Public Ignorance.*

A second and very important point is the lack of appreciation by the public of the gravity of heart disease in childhood. This, I think, can only be combated by simple propaganda and instruction. The medical profession would be much assisted by a better instructed public, as one example will show. We all recognize that early heart disease is often most insidious, occurring without pain or any striking symptom. So remarkable is this that we recognize a group of cases of primary cardiac rheumatism which may come first under our observation with very definite organic disease and yet with no data to guide us as to its exact commencement or duration. Even now, although I am well acquainted with these facts I get cases in the wards which astonish me by the severity of the lesions and the absence of striking symptoms. If we recognize that this is a difficulty, how much more doubtful must be the feelings of parents, who see their children lying in bed without pain or distress and are told that convalescence must be slow and carefully supervised! If, however, they recognize that the disease is caused by poisoning due to a microbe and that the poison softens the heart muscle, they are more likely to appreciate the necessary care when emphasis is also laid upon the fact that the entire future of the child depends upon the heart muscle becoming once more firm and strong.

The instructions I picture should be simple and terse, in the form of a printed leaflet, such as has been used in this hospital with success for many other purposes. It would be most effectual if they were issued from some official bureau, but even issued by hospitals, provided they were uniform in character, these leaflets would be very useful. At first they would probably only reach the parents of rheumatic children, but in due course they would doubtless find their way into the hands of many parents with children.

These are some of the instructions that appeal to me:

Specimen of Instructions.

1. Rheumatism is caused by infection by a microbe and is a frequent disease in large cities.
2. In children rheumatism often attacks the heart, and is the most frequent cause of organic heart disease.
3. Pains in the muscles and joints in children should receive attention as possible warnings of rheumatism.
4. Sore throats are often associated with acute rheumatism.
5. Rheumatic heart disease is often painless and requires a doctor's examination for its detection. Shortness of breath and pain over the heart require immediate attention.
6. The heart when injured by rheumatism recovers slowly from the poisoning, and one of the greatest dangers to a child's future is for it to resume an ordinary life before the heart is firm.
7. Chorea or St. Vitus's dance is rheumatism attacking the brain, and its chief danger is the tendency for the heart to be injured by the rheumatism at the same time.
8. Great nervousness, dreaming of school work, alteration in disposition, and slight twitchings are often seen before the chorea has become definite, and are warnings.
9. Rheumatism often recurs, especially in the spring and autumn.
10. An occupation in life for a child with heart disease requires careful choice.

Needless to say, if propaganda is employed the exact degree of information and the wording would be of the utmost importance. These headings are only some of my own ideas upon the subject. Able minds in this country would soon hit upon the best mode of instruction for the public if they once decided that it was the correct step to take.

3. *Chorea and School Teachers.*

A group of the public whom I think should be particularly approached by propaganda and simple lectures are the school teachers in the London County Council schools. It is possible that such steps are taken already and have escaped my notice. The reason for this action is the great amount of chorea in London during the school age. Chorea being cerebral rheumatism, it seems very probable that this frequency is in part due to overstrain and lowering of the resistance of the nervous system to infection. Now if in private practice we find a boy or girl at a private or public school flagging in health and becoming irritable and unequal to school life, still more if we find warnings of chorea, we advise a term from school and mental and physical rest. Chorea certainly is very rare among such children.

Fortunately for the children in the Council schools, Sir George Newman has taken up their cause with a large body of skilled assistants, but the enormous machinery required for the education of these masses of children and the frequent ignorance in the homes from which they come must result in many children attending in indifferent health, and even until they have definite chorea.

Possible Steps for the Prevention of Chorea.

I see very clearly the extreme difficulties of coping with such a problem, in the face too of the continual tendency of parents and children to take advantage of any relaxation of discipline. Yet I believe three steps would help:

1. The education of parents as already indicated.
2. Simple lectures on rheumatism and chorea in children to the school teachers.
3. I venture to think that an investigation on a large scale by the school doctors into the frequency of chorea in London school children, and into their histories immediately before their actual breakdowns, would give the medical profession most useful assistance. We should get a definite idea of the magnitude of the evil, and all of us would learn facts which would stimulate us to warn parents to call attention to ill health more promptly.

I cannot say whether or not some of the actual methods of education at present may not be at fault, but it is quite possible that a careful inquiry into the approved routine and character of the teaching may also lead to some useful suggestions. Rheumatic children are very sensitive, and may feel the strain of some particular kind or way of instruction to an extent which is not realized. If, then, as I believe, it will be found that the incidence of chorea is

much too high in London, it is possible that educational experts confronted by the facts will be able to modify some methods without any serious upset to the general machinery. The subject of chorea is well worth most serious investigation.

The school medical officers carry out valuable work for the cardiac children, and we see many cases caught up by them and sent to us for treatment. In that direction there has been a distinct advance in preventive treatment which has already proved encouraging.

4. *A Weak Point in Hospital Treatment.*

There is great need for the establishment of an auxiliary hospital near London to which we can send rheumatic children for their convalescence. Our hospital, for example, is needed for acute cases, but we know too well how wrong it is to nurse a child through an acute carditis and then to send it out with a heart still enfeebled by half-healed lesions to a poor home; in consequence we often keep these children for many weeks, and even then not long enough. Yet in private practice we should not dream of choosing a hospital ward in this part of London for a slow convalescence. We need auxiliary hospitals, because skilful supervision is required, and rheumatism is notoriously treacherous. It is not only fresh air and sun that I look for in these hospitals. Rest is a necessary part of the treatment of rheumatic heart disease; but blind unreasoning rest is bad—for there is no better tonic for the young heart than exercise, and convalescence from rheumatic carditis should be a history of graded exertion and not aimless rest. The auxiliary hospital can supervise these graded exercises with every hope of success. The ultimate goal is plain—it is to send the child back to its home with a heart strengthened to the level of carrying on ordinary life; and if that is unattainable to ascertain the limitations and advise the parents. In this country hospital it would be easily arranged in the grounds to have level paths and gradients of different degrees. There would be massage provided, and arrangements would be made for education. Such an institution must be linked with the parent hospitals, and it is essential that the medical officer should be enthusiastic in the cause and realize the essentially practical aim of such a hospital.

5. *Suitable Employments for Cardiac Cases.*

In America the care of cardiac patients, which since 1911 has been organized on a large scale, embraces adults as well as the young. I am here only dealing with the young children, but it is clear that any undertaking of this kind should not end abruptly at the age of 12 or 14 years, and there is one connecting link with the adult which is obvious. It is evident that though many cases of simple dilatation completely recover, and many slight mitral lesions also leave the heart practically as strong as before, in general terms rheumatic affections tend to lessen the reserve power. There are necessarily all grades of weakness to complete invalidism, and I have already indicated that our endeavour, while cases are under medical care, should be to ascertain these limitations as far as possible. Much of this labour will, however, be wasted if no organized attempt is made to study the various adult occupations in relation to physical exertion, and to make a practical schedule which can be within reach of parents who are placing their children with damaged hearts in the world. I am not discussing an abstract problem as to whether overexertion can strain a healthy heart, but content myself with the obvious fact that a damaged heart may easily be brought to ~~.~~ack and ruin by an unsuitable occupation. We want to prevent as far as possible a boy with a damaged heart becoming a coal-heaver or furniture-mover, and to give the child every chance of being placed in an occupation which will be suitable to his or her cardiac powers. So far as I am aware, in London there has been no organized attempt made to prevent by some accessible information the loss of the skill, time, and money spent on children with acute rheumatism that must follow the undertaking of unsuitable occupations. The suffering, the loss of life, and loss to the State from such mistakes must be very considerable. Parents no doubt do in many cases realize the dangers. I admit, too, that "needs must when the devil drives" is an ever-present obstacle; but there still remain, I believe, many who would be greatly assisted if the importance of occupation was included in instructions to parents, and better opportunities given to these damaged but active workers to select suitable occupations. In America this has been carefully investigated, and suitable lists provided.

6. *A Central Office.*

It would be necessary to have a special central office, in touch with hospitals and country hospitals, schools, and parents, where this information would be obtainable, together with propaganda and syllabuses of popular lectures. Looking far forward, it is my hope that eventually the study of rheumatism in its broadest sense will have a centre in London, in which research upon this great subject would be continuous. Divorced from the great hospitals such an institution would be a dead thing; but I can imagine this condition of affairs. A young investigator has decided to take up this subject, and goes with suitable testimonials to this headquarters for the necessary training in technique and knowledge of the literature. This accomplished, he receives an official introduction to the authorities at one or more of the great hospitals, by which he will be enabled to study the special cases upon which he is intent. Whether or not he worked in this or that hospital laboratory or at headquarters would be a matter of detail. The headquarters would be the centre for the arrangement of propaganda, lectures, etc., and would be in possession of the literature on the subject and be itself equipped with suitable laboratories. This control institute would eliminate one of the greatest obstacles to research in this country —the rivalry of the great hospitals. Search for the truth and the best requires no rivalries and no schools where one line of thought is obnoxious and another idolized. Research wants freedom. If I could live again and had a request to be granted, I would ask to be educated on sound lines in technique and literature and then be given opportunities to think my own thoughts and make my own mistakes. Then also a centre for continuous study is far less wasteful than sporadic efforts, which are often lost with the death of the investigator.

7. *Local Foci.*

Among the factors in the prevention of rheumatic heart disease removal of suspected local foci has not yet been mentioned. Up to a certain point I am a believer in local foci of infection, but I am sure that we still want to know more about the behaviour of infections in the human body before we can be dogmatic upon their exact value. The most important local focus in rheumatic heart disease is most probably the tonsils, and for nearly one hundred and fifty years the clinical importance of tonsillitis in relation to acute rheumatism has been recognized by physicians who have paid much attention to the disease. The following is a short account of the first complete observation that showed this suspicion to be correct.

A man, aged 28, came to hospital in June, 1900, suffering from acute tonsillitis, pains in the limbs, and mitral and aortic disease with dilatation and an excited action of the heart. There was a history of previous attacks of rheumatism.

Dr. A. Paine made a culture from the inflamed tonsils in the acid milk medium we used, and twenty-four hours later a minute strepto-diplococcus in association with other micrococci had grown in the tube. These were plated out on fresh blood agar and the diplococcus isolated. This, injected intravenously into a rabbit, produced acute carditis with endocarditis of the aortic and mitral valves, and the same diplococcus was isolated from these lesions in pure culture.

Even if the conclusions from this investigation are not pushed thoroughly home, it is apparent that from a case of acute rheumatism with heart disease a strepto-diplococcus, isolated by plating from the inflamed tonsils, determined an acute carditis, even to the point of reproducing similar valvular lesions. This result, coupled with later ones from chronic tonsillitis in children and supported by the researches of Fritz Meyer in 1901, when added to the long history of clinical observations laid the foundation of the view of the infective focus which has now such far-reaching application in rheumatic affections.

Nevertheless, caution is required in pressing this point too far, for removal of the tonsils, as is now well known, does not prevent further attacks, though I have no doubt in my mind that unhealthy tonsils should be removed in rheumatic children. It would be, in my opinion, a mistake to suggest the wholesale removal of tonsils in rheumatic children and

those suspected of rheumatism when there is no evidence that they are diseased. Further, we do not know all the avenues of infection. The wholesale removal of tonsils must mean occasional disaster to a healthy child, and the ground for such a step as this must be absolutely sure. The medical profession has to accept the factor of some infective focus in acute rheumatism, and in course of time we must learn how far steps should be taken along these lines for the prevention of the infection. Our experience as yet is not sufficient.

SUMMARY OF ARGUMENT.

I have now finished my comments upon the weak points in the present management of rheumatic heart disease in the young, and the steps that appeal to me as likely to be of service. Briefly summarizing these now, they are:

1. Improvement in medical instruction.
2. Education of the public, particularly parents and school teachers, by propaganda and lectures.
3. Further investigations into the incidence of chorea in London.
4. Auxiliary country hospitals with a special department for cardiac children.
5. A schedule of suitable occupations for cardiac children.
6. A central bureau for purposes of organization. In the far future an institution for research into and the study of rheumatism.
7. Discrete treatment of local foci.

Expectations from Prevention.

It may now be fairly asked what we may hope to gain by measures which mean expenditure of money and a great deal of skilled organization. It may be objected that we are not going to cure rheumatic heart disease by these methods, and that our active therapy is very imperfect. Will these children then benefit much by these measures, and will the State gain any advantage? It seems to me that much is to be hoped. In the first place, these measures introduce a new atmosphere into the study of heart disease. Heretofore we have treated the acute illness and we have patched up the chronic heart conditions, but often enough, I think, without attempting to distinguish between the active infective process and the passive results from scars. In other words, we have treated these patients as cases of heart disease rather than as cases in which a cardiac lesion is the prominent symptom of an infective process. Now with prevention we are irresistibly led to think ahead, and to treat such cases with a view to the future, asking ourselves, How did this occur? Where was the weak point? Have we got the active element of the disease under our control? and Have we got the best possible result in the circumstances? This line of thought invariably makes for progress and for thoroughness. Those who have watched cases of rheumatic heart disease in private practice with every advantage in treatment and care must have been astonished to see how wonderfully they may recover. It is to anyone who has not had this experience a revelation. I believe that we should, with prolonged and skilfully managed convalescence, see a great improvement in our results with the most important group of all our cases—the first attacks of rheumatic carditis. With proper organization, I believe, we should get hold of the cases with recurrent attacks more easily and give them also a much better chance of recovery. I feel convinced we should learn to prevent much chorea, and believe that in a few years we should learn much more about the life history of the rheumatic child, and thus prevent many breakdowns during school life. All this would be the more valuable because the incidence of cardiac rheumatism is greater in the first fourteen years of life than at any other period. Care as to occupation in after-life must produce good results. Lastly, I believe that along these lines we shall throw light upon the malignant or progressive forms of endocarditis, because we are more likely to discover the early departures from health which precede the established disease, as year by year we get the cardiac cases more carefully organized and under more complete supervision.

I hope that very careful consideration will be given to this question of prevention. The ravages of rheumatic heart disease deserve our close attention in London, and wherever there seems to be any ray of light that direction is worth exploring. I am no advocate of wild schemes. When I see an old country garden with some dead trees and damaged shrubs I do not advocate its total upheaval and conversion into a modern one. We can work by degrees and test each step. Do not suppose that I advocate, for example, building a number of auxiliary heart hospitals; on the contrary, these cases could be well managed in an auxiliary hospital of a general type, if the special needs of these children were considered.

It is high time that the whole subject should be considered seriously by our profession, and if after careful consideration prevention does not appeal as a practical undertaking, at least we shall know the reasons for such a decision, and whether we agree or not shall not feel, as I do now, that in London we are content with the policy of drift.

THE ECONOMIC ASPECT OF HEART DISEASE.

BY

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THE vast economic loss to the community caused by disease must be obvious to anyone who has ever reflected on the subject; more particularly patent did this become during the great war, when perhaps for the first time the labours of the Royal Army Medical Corps with regard to hygiene and preventive medicine began to be fully appreciated. The conception of disease held by the laity is largely based upon their experience of acute diseases, such as scarlet fever, measles, and diphtheria. In such cases the patient as a rule either dies or gets well again in a reasonable length of time. This, too, was the idea of the ancients, in whose writings far more space was devoted to the consideration of fever and other cognate acute diseases than to chronic disease, for, like the artisan of Plato, "they had not leisure to be ill." Yet, of course, the medical profession is well aware that in the modern world the sum total of human distress and inefficiency caused by chronic disease far exceeds that produced by acute disease—at all events in Western Europe and America—so greatly have acute diseases been reduced by the energy and science of modern hygiene. But from chronic disease the economic loss is enormous, and in the case of cardiac disease, with which this paper is concerned, it is particularly great. Thus in the United States it is said to be the cause of the greatest number of deaths and disabilities.

No doubt the abolition of all forms of rheumatism and of syphilis would reduce cardio-vascular disease by nearly two-thirds, but apart from the immediate onset of any such medical millennium it seems well to consider by what mechanism we can ameliorate the condition of cardiac patients and render their lives more economically effective.

The ancients were under the impression that the heart was invulnerable so that no disease could befall it, and in some ways it seems unfortunate that the word "disease" has to be applied to the heart, for it so often creates an erroneous impression in the mind of the laity in general and employers in particular, associating it as they do with the idea of sudden death. Cardiac disability or a "laming" of the heart would almost seem to be a more appropriate expression, for in truth when the heart has been damaged by rheumatic fever so that there is a valvular lesion, it is in many cases in a condition analogous to that of a limb after anterior poliomyelitis: it is definitely and permanently handicapped, but the condition is not necessarily progressive. But just as a man who has suffered from infantile paralysis may not have his activity very seriously impaired for his life's work, so too a patient with a compensated valvular lesion may frequently not be greatly inconvenienced. One must never forget that cardiac disability varies from complete invalidism to a state of fairly high efficiency, the majority of cases being correctly classified as "moderately handicapped." Hitherto attention has been rather too much directed to the serious cases of heart disease and away from the merely handi-

capped, which from the public health and economic point of view are just the cases which most require assistance.

At the present time the difficulty which besets physicians in charge of cardiac cases among the poorer members of the community is that the patients must so often be sent out of hospital too soon, owing to the large number of prospective patients on the waiting list. Others, again, may be left in hospital too long because there is no alternative but returning to a most inadequate home with all the temptation which a man must have to take up his old work long before he is fit for it.

What is required is something in the nature of a convalescent camp, which should, so to speak, be an integral part of the hospital. If there were such a camp in existence, quite a number of cardiac patients who are now perforce retained in hospital for six to seven weeks might readily be transferred to the camp after the lapse of two or three weeks, where they would be under supervision and able to take quiet exercise in a way which is hardly possible in an ordinary urban hospital. But in addition to such a convalescent camp, or rather in conjunction with it, what is specially wanted is some machinery for enabling patients after a sufficient interval to get back to their former work, if suitable in some cases, while in others there is required some means of training for such trades as are known to be specially adapted for patients with a cardiac lesion.

In this connexion it may be of interest to describe what is being done in America with regard to what they call "occupational therapy," or sometimes "follow-up therapy," in connexion with heart disease.

In America definite measures are taken to combat heart disease, or rather the effects of it, somewhat similar to what is done with regard to tuberculosis. The difference, of course, is that in the case of tuberculosis we know the cause and can attack it at the source; in the case of heart disease, rheumatism, which is perhaps the causal factor of 50 per cent. of cardiac cases, does not easily lend itself to such prophylactic treatment as shall abolish it. But in the case of heart disease due to rheumatism, unlike the lungs affected by tubercle, there is no such likelihood of progress to an untimely death, only a definite curtailment of life's activities; a most important part of treatment is to discover what kind of occupation may suit the handicapped condition.

Now as a result of the Hospital Social Service Conference in New York, the Sharon Convalescent Home for Cardiacs was established in 1913, and the organization known as the Trade School for Cardiacs was formed. So important did the problem appear that the organizations interested in its different phases were co-ordinated, and as an outcome of the interest thus aroused there was instituted in New York in 1915 an association for the Prevention and Relief of Heart Disease, its purpose being to co-ordinate and promote the efficiency of all organizations doing cardiac work in New York. In spite of some setback during the two years when America was in the war, a very great deal has been done by the instrumentality of this association towards making a cardiac patient more generally efficient. It has, of course, long been known to physicians that a very large number of cardiac patients are capable of doing quite a fair amount of work with, it may be, an occasional breakdown, but there is in this country no adequate organization for making the best of these somewhat handicapped cardiac patients.

The essential points arrived at by the American society are (1) prolonged convalescent care, (2) opportunity for securing for the patient work of a less exacting nature. In Greater New York there are as many as 300 beds for convalescent heart patients; of these one-fifth are for adults and four-fifths for girls. Experience seems to indicate that one heart convalescent bed is required for every 10,000 of a large city population. These convalescent beds for heart patients cost about £45,000.

It is claimed by this association that the total disability period is distinctly shortened (1) when hospital treatment is completed by a convalescent training which will lead directly, under medical supervision and regulation, into work instead of dependency; (2) by the adjustment of the patient to a substantially gainful occupation suitable to his mental and physical capacities. "If the proper treatment of a cardiac patient is not drugs but a change of occupation, should not this be supplied, just as an operation should be given free to a patient with a hernia, or quinine administered to a case of malaria?" The cost of finding a cardiac case lighter work is discovered to be far less than the cost to the same hospital of this patient, who will return repeatedly for longer and longer periods if he is allowed to undertake his former occupation without adequate supervision. An employment bureau for cardiacs should be supported by the hospitals themselves, and with this bureau should be established also an "occupational bureau."

Dr. F. Brush, Medical Director of the Burke Foundation for Convalescents, very wisely says: "Cardiac cases need particularly correction of neuroses and faulty mental attitudes, upbuilding of general physical and heart muscle strength through short period activities alternating with rest, and the inculcation of ways of life that will carry on into the main pursuits—which are happiness and service." Such requirements are, in his opinion, best met by the "play cure," which can be obtained anywhere and requires when fully developed but a modest equipment. It should be carried on mainly out of doors and it excels in giving outlet and expression to the larger part of the personality. Dr. Brush, from his wide experience at the Burke Foundation, where 3,500 cardiac cases have been treated, finds that "occupational therapy" can be remedially applied in convalescence for only one or two hours a day, whereas to "recreation therapy" three to six hours may be reasonably devoted. Hence there is a department for recreation and occupation, and they are made to alternate in a suitable way. Further observation does not show that cardiacs will overdo themselves later in consequence of their recreational satisfactions while in the convalescent home. Even granted that the heart itself were made no better by this play training, life was made better and heartier—a clear gain. As Dr. Brush forcibly expresses it: "It is important for our two millions of cardiacs to know how to play."

The exercises applied in the convalescent-reconstructive stages of heart disease have three main purposes: (1) To improve the general condition (nutritional, muscular, and organic); (2) to increase the cardiac reserve power; (3) to lessen the introspective and neurotic tendencies, for the psycho-neurotic element is very important in many forms of heart disease. It is a good thing for the exercises to stimulate and merge into everyday physical and social activities. Though formal gymnastics are found helpful in inspiring courage and getting hold of the mild slacker and neurasthenic, after six years' observation of 3,000 heart convalescents, no régime has given such all-round satisfaction, safety, and success as the old farm régime, where a total of nearly 500 cardiacs, boys and young men, were given essential freedom of play and work over the place—of course under reasonable regulations of rest, etc.

Dancing has been found a most useful exercise; it certainly ranks very high in mental therapeutics. Convalescent cardiac cases with but a moderate degree of cardiac reserve may begin cautiously to dance and then go on to considerable indulgence with safety and benefit. Patients are often under the impression that dancing is necessarily a strenuous and exhausting exercise, whereas short period dancing, shuffling with little weight lifting, is one of the mildest exertions. Dancing gives an additional and readily available test of the cardiac reserve and of progress. Among all the thousands of dancers there have only been twenty collapses or partial faints, and these were found to be mainly hysterical or neurotic.

Much of the success of this American method of dealing with those handicapped by heart disease depends on obtaining the services of an intelligent social service worker whose duties include the visiting of the patient in his home, the education of the patient and his family, the improvement of home conditions, and often the securing of some lighter or more suitable form of work.

Were it possible to have in this country some of the facilities for dealing with cardiac cases which obtain in

the United States and have been so wisely utilized there, it can hardly be doubted that a considerable economic saving would accrue to the community, while to the individual patient there would be given that truest source of happiness—the increased power of exercising an activity.

For much of the information in this paper I am indebted to the kindness of the Secretary (Miss M. L. Woughter) of the Society for the Relief and Prevention of Heart Disease, 370, Seventh Avenue, New York.

ACUTE PAN-SINUSITIS: A SEVERE CASE.

BY

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MANY cases of acute suppuration in the accessory sinuses of the nose never apply for treatment, the majority being looked upon as merely part of a severe "cold in the head." Of those that do come under observation some are never diagnosed, and in others the original infection is overlooked or forgotten by the greater claim of the secondary infection to which it may have given origin.

This helps to explain why many illnesses are dated, both by the public and the profession, from "a cold" or "chill." This head-cold, in such cases, may have been the primary infection, causing a sinusitis from which originated (*a*) symptoms in the neighbouring region (pharynx, eyes, ears, head, face), or (*b*) in more distant organs (lower respiratory and digestive tract), or (*c*) interference with general health (simulating typhoid, malaria, neurasthenia, etc.). Doubtless many a bronchitis or pneumonia, beginning with a "cold in the head," has owed its infection to pus in an accessory sinus.

It is quite uncommon for an acute sinusitis to run a course of any length without some secondary infection becoming the predominant disease. I have published two of my own cases of sphenoidal sinusitis in which death resulted with cerebral and ophthalmic complications, together with forty other cases recorded in literature.[1] All these forty-two cases were verified by a *post-mortem* examination.

But it is so uncommon for a sinusitis to remain acute for any length of time, without secondary infections, that I think it might be interesting to record the most severe and persistent case I have ever met with. The temperature chart alone indicates the length and severity of the resulting illness. The only complication was the rare one of an acute thyroiditis, and this did not develop until the third week of the sinusitis. (See chart.)

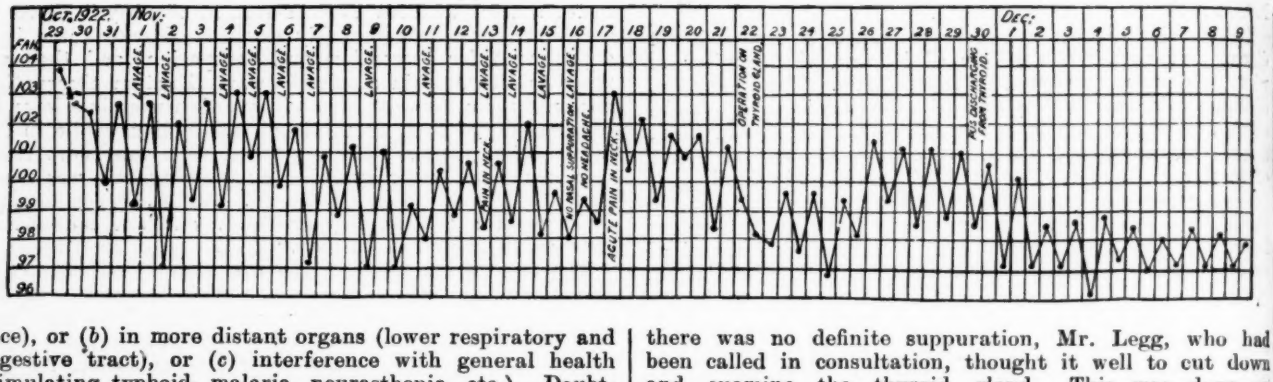
On October 31st, 1922, I was called by Dr. Giordani to see a foreign diplomatist. For four days previously his temperature had been raised, reaching even 104°. He looked very ill, complained bitterly of his headache, chiefly frontal, and was sweating freely. There was copious pus in both nostrils; all the sinuses were involved. The maxillary sinuses were lavaged and abundant pus expelled.

This lavage had to be repeated twelve times in sixteen days before the maxillary sinuses cleared. During this time the inflammation in the cavities was so acute that on certain occasions the abundant and clotted pus was uniformly pinkish. Discharge from the sphenoidal sinuses was encouraged by local applications of cocaine and adrenaline. Inhalations of menthol steam were frequently given. The expelled pus, examined bacteriologically by Dr. E. Burnet, produced a growth of staphylococci, streptococci, and pneumococci.

The flow of pus from the region of the frontal sinuses soon diminished and frontal headache ceased; the suppuration from the maxillary sinuses persisted, in spite of lavage; but the most persistent discharge and headache came from the sphenoidal sinuses. The sphenoidal sinusitis not only produced a bilateral parietal headache, but a still more intense ache in the typical situation of the occipital region and nape of the neck. Here the headache was so acute that we were very glad to have the opinion of Dr. Farquhar Buzzard. The sinusitis had persisted for nearly three weeks when he saw the case on November 13th. He decided that there was no invasion of the central nervous system.

During this long-drawn-out suppuration Dr. Giordani and I had been keeping a careful watch for secondary infections, but the eyes, ears, throat, lungs, heart, kidneys, and digestive tract remained unaffected. About the twentieth day the patient complained of pain on the right side of his neck, and we found the thyroid gland swollen and tender. This proved to be the beginning of the only secondary infection which the patient developed.

On November 19th—the twenty-fifth day of illness—both maxillary sinuses were lavaged and found quite clear; there was only a trace of muco-pus from the sphenoids; the headache had disappeared and the temperature was round about 99°. But the pain and swelling in the neck persisted; the temperature rose again in a few days to 103°, and, although



there was no definite suppuration, Mr. Legg, who had been called in consultation, thought it well to cut down and examine the thyroid gland. This was done on November 22nd—nine days after the first symptoms referable to the neck and in the fourth week of the sinusitis. The right lobe of the thyroid gland having been exposed through a transverse incision, punctures were made in various directions and the gland explored with forceps and dissector—but no pus was found. During the operation it was remarked that the connective tissues of the region were oedematous and the veins very distended. Two drainage tubes were left in place; local symptoms (pain and swelling) improved next day, and a week later pus began to escape from one tube and continued for a week, with a normal temperature (see chart). Cultures gave the same organisms as had been found in the nasal suppuration. The left lobe of the thyroid enlarged for a week—just as the right lobe was subsiding—but it caused no pain and went down in a few days.

On December 2nd, five weeks after I had first seen him, the patient was convalescent, but it was not until the end of January that he was able to come to my study for examination. Except for a little fistula in his neck no local symptoms of his severe illness remained. There was no trace of pus in his nose or throat, and transillumination of the formerly opaque maxillary sinuses showed that they were quite clear.

Although organically sound he was looking very shaky, and no wonder, for he had been a very sick man for three whole months. This prolonged illness, entailing fever, severe pain, and insomnia, had all resulted from an acute pan-sinusitis. Complications had, I believe, been averted because the case was diagnosed early and treated seriously. The local treatment has been described. The regular lavage

of the maxillary sinuses prevented stagnation in these cavities and its consequent back-pressure and reinfection of the deeper sinuses. The frontal sinuses drained spontaneously and were the first to clear. The drainage from the sphenoidal sinuses was encouraged by daily, or twice daily, introduction of strips of gauze (between the middle turbinal and septum) soaked in equal parts of 5 per cent. cocaine and adrenaline. I was very glad that I had refrained from any operative treatment on these deeper cavities. The traumatism entailed might only—in such an acute infection, and in the narrow and sensitive nose—have resulted in further blockage to the outflow and might possibly have spread infection to other areas through the blood or lymph streams. Pain, insomnia, fever, and other symptoms were treated on general principles. Local warmth (by woollen nightcap and radiant heat) gave relief.

I have never seen a fatal case resulting directly from acute sinusitis, diagnosed in good time, and treated on the lines described in this paper. In the two fatal cases of sphenoidal sinusitis which I have referred to, secondary infection of the meninges or cavernous sinus had developed before the patients came under observation.

The care taken of the present case was successful in fending off all complications, except the curious acute thyroiditis. This, I imagine, was an infection via the lymphatics, from the pharynx or tonsil, due to the pus descending from the sphenoidal sinuses.

The moral I venture to draw from this case is that all cases of acute sinusitis should be regarded with much more consideration than they generally receive. If carefully treated there are very few which would not recover completely. Most of the chronic cases seen in practice and requiring operative treatment commenced originally as acute cases. Had they then been treated carefully, they would not have drifted into the chronic infections which entail so much ill health and often demand prolonged attention and sometimes anxious operative measures.

The treatment of acute sinusitis is largely in the hands of the family physician. Except for exploratory puncture and lavage of the maxillary sinuses, operative treatment is rarely called for in an acute case.

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OPTIC NEURITIS OF SPHENOIDAL SINUS ORIGIN: OPERATION: CURE.

(*With Special Plate.*)

BY

SIR STCLAIR THOMSON.

THERE are various causes of retrobulbar neuritis. I am able to give a very full report of a case in which the onset of this affection was rapid and the cause was undoubtedly suppuration in the sphenoidal sinuses.

Previous History.—A young man of 24 reported that, as a boy, he had worn glasses, but that on joining the army, during the war, he was told that glasses were not necessary. He served for three years in the army, chiefly on the Italian front, and during his service he developed a yellow-green post-nasal catarrh with occasional cacosmia. After demobilization in 1919 he noticed that he had more need of handkerchiefs and had to wash his nose out. When fatigued he was subject to headache over the left eye.

Sudden Onset.—On November 20th, 1922, while on business in Germany, he felt depressed all day, and in the evening was surprised to find that he could not see anything clearly from the left eye. He consulted Professor Römer of Bonn on November 23rd, who found that there was inflammation of the optic nerve of the left eye, negative Wassermann reaction, and that an *x*-ray photograph showed some opacity of the accessory sinuses. A written report advised that the trouble was serious and threatened the eyesight, and that it was a question for a rhinologist whether the condition would abate with conservative treatment or require operation on the sinuses.

Nasal Condition.—On November 28th I found pus on the floor of each nostril and the roof of each choana. Exploratory lavage of the maxillary sinuses showed them to be clear. *X*-ray examination by Mr. Coldwell revealed marked obscurity of the frontal and sphenoidal sinuses. It was impossible to catheterize the left sphenoidal sinus, owing to the prominence of the middle turbinal. There were numerous carious teeth, and the patient was at once sent to Mr. W. Hern for attention to them.

Ophthalmic Report.—On the same day he was examined by Mr. Treacher Collins, who reported as follows:

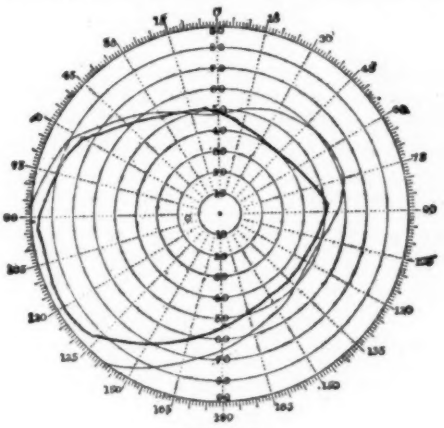
"Has had aching pain in left eye for three days, which then ceased. Eyeball still tender to pressure, but not so much so as at first. Experiences sharp pain on movement of his left eye upwards. Vision of right 6/9 partly; −1 cyl. 120°=6/6; 1 letter. Left 6/60 unimproved. Left pupil acts to light but does not maintain contraction 'hippus.' Ophthalmic examination shows marked swelling of the left optic disc, blurring of its margins, and obscuration of retinal vessels. The swelling of the disc = 6 D. Right optic disc normal. Field of vision in left eye somewhat contracted up and in (vide Chart 1)."

Treatment.

The same evening the patient entered a nursing home, where he was given radiant heat baths to his head, for twenty minutes three times a day, with steam inhalations of menthol and eucalyptus every two hours, and a few doses of aspirin. The left eye was kept covered so as to exclude all light. This treatment was continued for three days, but, as there was no improvement in his eyesight, I proceeded to operate on the sphenoidal sinuses on December 2nd.

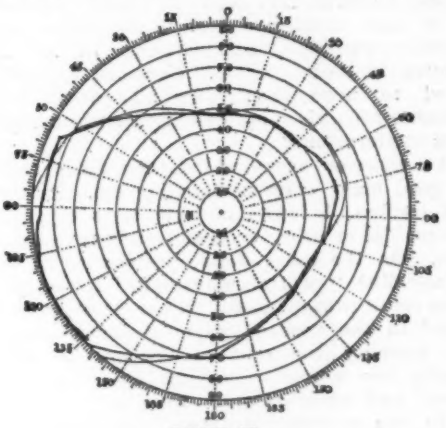
Operation.—The area of the nose was prepared half an hour beforehand with strips of ribbon gauze soaked in equal parts of 5 per cent. cocaine and adrenaline, and tucked in between the middle turbinal and the septum. This rendered the nose so ischaemic that, when placed under a general anaesthetic, it was not difficult to introduce Killian's long duck-billed speculum between the septum and the middle turbinal, so as to snap and prise outward the latter body. This proceeding avoided the removal of a healthy and useful middle turbinal, with the traumatism attendant on its amputation. The ostium of each sphenoidal sinus was then well opened with punch forceps.

Immediate Results.—Four days were allowed to elapse for the nose to recover from the inevitable reaction. During this time there was no change in the eyesight, although the treatment



LEFT I.

CHART 1.—Optic neuritis of sphenoidal sinus origin. November 28th, 1922.



LEFT II.

CHART 2.—Optic neuritis of sphenoidal sinus origin. February 17th, 1923.

by radiant heat, steam inhalations, and rest was continued. On December 6th both sphenoidal sinuses were washed out with warm normal saline, and the patient at once noticed a remarkable improvement in his vision. Two days afterwards Mr. Treacher Collins reported:

"Vision of left eye = 6/18. Still much swelling of the optic disc. White lines in the retina to the outer side of the optic disc."

Progress.—Daily lavage of both sinuses was continued, clotted yellow pus being expelled. On December 20th the radiant heat baths were given up; the patient was sent out into the fresh air, and the washing of the sinuses was continued every two or three days. The discharge was examined bacteriologically and reported to contain—

"a large number of Gram-negative bacilli with a small number of cocci and diphtheroid bacilli. On culture these proved to be the pneumobacillus of Friedländer, *Staphylococcus aureus*, and a diphtheroid bacillus of the Hoffmann type."

Progress was continuous. By January 2nd Mr. Treacher Collins reported:

"Vision of left eye = 6/9 partly. Swelling of optic disc = 1.5 D. Two white dots now only seen in retina."

By January 16th he thought the swelling of the disc was less, and no retinal changes.

Cure.—By February 17th his report was as follows:

"Vision of his left eye is now better than that of his right. With −0.5 cyl. 90° he sees part of 6/6 and reads J.1 fluently. His field of vision shows only very slight contraction up and in (vide Chart 2). The swelling of the optic disc has subsided, but it still presents rather ill-defined margins, and has a filled-in appearance, no sign of physiological cup showing. The retina is quite clear."

The sphenoidal cavities had been washed out at decreasing intervals, and their interior had occasionally been painted with 25 per cent. argyrol. All suppuration in them has now ceased, the greenish-yellow post-nasal discharge has disappeared, and, as a result, the patient has gained in weight and feels better than he has done since the war.

In 1906 I published two cases in which I was able to demonstrate by *post-mortem* examination that ophthalmic complications (hazy discs and diplopia in one, with optic neuritis and complete ophthalmoplegia in the other) were due to suppuration in the sphenoidal sinuses.[1] This led me to a study of the literature of the subject, and I was surprised to find no fewer than forty other cases in which it had been shown by *post-mortem* examination that sphenoidal sinusitis had been the cause of cerebral death. Many of these cases had been accompanied by orbital or ophthalmic symptoms, and changes in the fundus had been noted in half of them. Fortified by this research I ventured to urge that "in all cases of apparently inexplicable retinitis, papillitis, and optic atrophy the nose requires exploration."

In the eighteen years which have since elapsed I have had a good many cases referred to me. In the majority, I must confess, I found no symptoms of suppuration in the sphenoidal or other accessory sinuses to explain fundus changes. On the other hand, in cases of affection of the orbit (so-called "orbital phlegmon," unilateral proptosis, etc.) the *causa causans* could, in the large majority of cases, be found in the nose or its accessory sinuses.[2] This led to my forming the opinion that while the nose was frequently the source of orbital affections, yet retinitis, papillitis, and optic atrophy were only rarely caused by sepsis in the accessory sinuses. In this opinion I was confirmed by certain cases of retrobulbar neuritis in which I opened the sphenoidal sinuses and found them free from suppuration. The observation that, in many of these cases, the neuritis disappeared only made me think that the cause of it must have been elsewhere. I did not think of claiming the cure as a consequence of opening a healthy sinus.

But, lately, other views have been put forward. It is now held that "the mere presence of pus in the sinuses may undoubtedly be the cause in some instances, but is by no means the usual or only one"; that "in only a small percentage of cases has pus been found"; and that "deflected septa with crowding of the chronically enlarged middle turbinate are the most usual findings."[3] We are even assured that "poor ventilation and faulty drainage are all important predisposing factors," and that "it is futile to longer believe purulent sinus disease the one and only etiological factor."[4] Quite recently nine cases of retrobulbar neuritis were treated by sphenoidal drainage. In only one case (sixteen months' duration) no improvement had resulted. Yet in only two out of these nine cases was pus found.[5]

These and similar records would seem to warrant the exploratory opening of the sphenoidal sinuses in cases of retrobulbar neuritis, even in the absence of evidence of suppuration in these cavities or the neighbouring ethmoidal cells—when no other cause for the retinitis can be found, and the patient is threatened with blindness.

To suggest the opening of healthy accessory sinuses is a doctrine not altogether free from danger. I have been associated with cases of retrobulbar neuritis which recovered without operation on an accessory sinus and without any definite diagnosis of the cause of the condition. I would like to learn more of the disease from ophthalmologists and to hear from them what is the usual prospect of recovery. It seems a subject very suitable for a joint discussion from this point of view.

In any case, there can be no question as to our duty in opening and draining suppurating sphenoidal sinuses when associated with optic atrophy. In the case reported above operation was strongly recommended by two distinguished ophthalmic surgeons, and it had a double benefit—it averted blindness, and cured the patient of a chronic suppuration which had been poisoning him for some years.

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[3] Leon E. White: Aeration of the Posterior Accessory Sinuses in Acute Optic Neuritis, *The Laryngoscope*, xxxii, May, 1922, p. 382.

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[5] Gavin Young: *Journ. of Laryngology*, December, 1922, and April, 1923.

CYST OF THE RIGHT SUPRARENAL CAPSULE REMOVED BY OPERATION.

BY

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(*With Special Plate.*)

AN operation for the removal of a cyst of the suprarenal capsule is a rare procedure, and a cyst of this organ large enough to produce pressure symptoms is very uncommon; the following case, therefore, seems worth recording.

In August, 1921, I saw, with Dr. Wortley Quait of Mundesley and Dr. Burton-Fanning of Norwich, a lady, aged 49, who for many years had suffered from "indigestion." The trouble had been much worse for the last five years and was mainly characterized by pain in the back passing round the waist to the epigastrium. The pain had no relation to meals, and would often come on at night, when a little food would bring relief. Of late the diet had chiefly consisted of fish and milk foods, and there had been much flatulence and some loss of weight. The patient had been backwards and forwards between this country and the tropics for twenty years, and often when abroad she would be quite free from indigestion troubles for six months at a time. For the last six weeks there had been frequent vomiting, but a week might pass without any sickness, and after such an interval the patient would bring up a considerable quantity. There had never been haematemesis. Constipation had been very troublesome. The stomach was seen to be distended and visible peristalsis was present; there was no tenderness anywhere and no tumour could be felt. An *x*-ray examination showed that even after eight and a half hours a bismuth feed had not entirely left the stomach.

First Operation.

The abdomen was opened and an old ulcer of the first part of the duodenum, just beyond the pylorus, almost encircling the bowel and narrowing it, was found. The stomach was dilated and hypertrophied. A posterior gastro-jejunostomy was performed and the appendix removed. The gall bladder was healthy.

During the examination of the abdominal contents a large cystic tumour was found in the right hypochondrium occupying the concavity of the diaphragm and pushing the liver to the left and downwards, so that the gall bladder was in the middle line of the body and the edge of the right lobe of the liver on the level of the umbilicus. The kidney was displaced downwards, but the cyst was only slightly attached to the upper pole of this organ. At the conclusion of the gastro-jejunostomy it was deemed advisable to defer the removal of the cyst, and the abdominal wound was therefore closed. The patient made a satisfactory recovery from the operation, and examination of the right side of the abdomen a few weeks later did not reveal any abnormal swelling

Skiagram showing condition of sphenoidal sinus before operation. Inset: Sketch showing the relation of the parts. T, Sella turcica. S, Sphenoidal sinus. E, Perpendicular plate of the ethmoid.

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FIG. 1.—Cyst as seen from the front. The yellow nodules described in the text are seen scattered over the cyst wall, and some of them are marked with crosses. The main mass of the suprarenal capsule is at the upper part of the photograph on the left side.

FIG. 2.—Section of cyst wall, low power. There is a layer of fibrous tissue on the outer and inner sides of the section. In the outer half of the wall are seen the glandular cell elements. The inner surface of the cyst at the bottom of the photograph is lined by a layer of flattened cells. Blood vessels are seen cut across in the wall of the cyst.

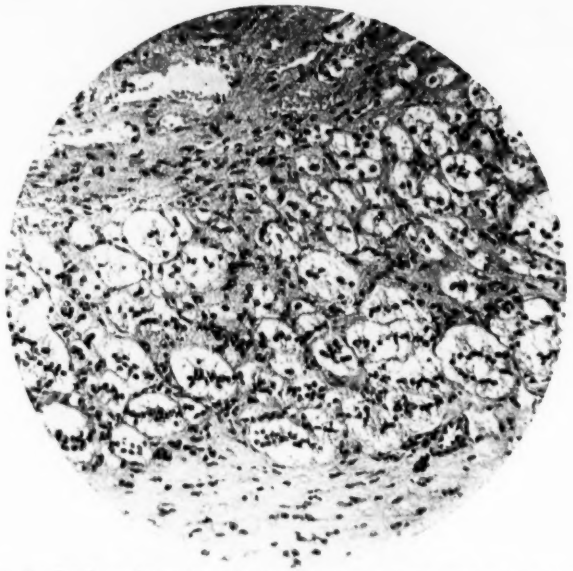

FIG. 3.—Section of portion of the thickness of the cyst wall under a high power, showing adrenal cells; many have degenerated.

SIR G. LENTHAL CHEATLE: EARLY AND CURABLE DISEASE OF THE BREAST.

FIG. 1.—Photograph of a plugged mammary duct outlet. A is a sebaceous gland, the duct of which can be seen opening into the mammary duct outlet. A1 is another sebaceous gland. B marks the opening of the duct outlet on the surface of the nipple. C is the duct opening into its outlet; the lumen of the duct is clearly seen to be quite patent.

FIG. 2.—A lower power drawing from a section showing a mammary duct A, and its outlet on the surface of the nipple. Sebaceous glands are opening into the duct outlet. There is here seen to be a perfectly clear pathway for many kinds of irritating agents. The dilatation at the outlet is normal. B shows

in the right hypochondrium. The cyst appeared to be wholly in the hollow of the diaphragm and could not be felt below the costal margin during inspiration.

Second Operation.

Three months later the patient was again seen, as she had been complaining of distension and sense of pressure in the right loin, and by this time the right side of the abdomen was distinctly fuller than the left and dull on percussion. A large, smooth, ill-defined swelling could just be detected coming down from under the right costal margin on inspiration, and the right kidney could be felt in the iliac fossa.

With the patient on the left side an incision was made below the twelfth rib and the cyst exposed. To assist in its removal it was tapped, and was then peeled off from the surrounding tissues, to some of which, notably the peritoneum and the tissues in the neighbourhood of the vertebral bodies, it was very adherent, so that enucleation took a considerable time. The cyst separated easily from the kidney and it was not adherent to the liver. A very large cavity was left, occupying the arch of the diaphragm behind the peritoneum, which was not opened. Temporary drainage was allowed for and the rest of the wound closed.

Convalescence was uninterrupted, but at the second operation it was felt that, in view of the very firm adhesions of the cyst wall to its surroundings, it was fortunate that the removal of the cyst had not been attempted at the time of the gastro-jejunostomy.

Examination of the Cyst and its Contents.

The cyst contained two and a half pints of thin, amber-coloured, odourless, turbid fluid, which was neutral in reaction and became solid on boiling owing to its albuminous contents. It was estimated that the cyst, before tapping, measured 9 by 6 inches; the wall varied in thickness from one-eighth of an inch to that of a sheet of writing paper. The outer surface was smooth except where the adhesions had been dense, and irregularly distributed on the surface, especially over the lower part of the cyst, were slightly raised yellow nodules varying in size from a quarter to a sixteenth of an inch, which can be seen in the photograph (Special Plate, Fig. 1). Similar nodules have been noticed on cysts of the suprarenal capsule removed by other surgeons.

The inner surface was rather rough, yellowish-pink in colour, and, in places, covered with a white sebaceous-looking material. Some of the fluid from the cyst was forwarded to the Clinical Research Association so that it might be tested for adrenaline. The report received was as follows:

> "We have carried out the only tests which, as far as we can ascertain, will assist in confirming the epinephric origin of the cyst. Chemically, the phosphotungstic acid test gives a faintly positive reaction for adrenaline. A similar positive might be given by uric acid. But by other tests both this substance and urea have been proved absent.
>
> "The physiological tests (ciliary reaction and direct application under the microscope to the vessels of the mesentery of a pithed frog) both give a definitely, if weakly, positive reaction when the fluid is used. There is, in both instances, a specific sympathetic stimulation evidently due to some constituent of the fluid. As controls in these last experiments normal saline and a 1 in 5,000 solution of adrenaline were used, and we think there is considerable evidence that adrenaline is present in small amount of the cyst fluid. There are no cytological abnormalities, a few leucocytes and very occasional red blood cells only being present."

Sections of the cyst wall were made through some of the yellow nodules, and I am greatly indebted to Dr. Donald Hutchinson of Lowestoft for the beautiful microphotographs here reproduced. The section of the cyst wall under a low power (Fig. 2) shows adrenal cortical cells embedded in its outer half. There is a fibrous layer in the cyst wall externally and internally, and the inner surface is lined by a layer of flattened cells. The high power (Fig. 3) shows that many of the glandular elements in the cyst wall have degenerated.

Doran, in 1908, described a case of cyst of the left suprarenal capsule, in a woman of 62, which he removed by operation. The tumour was over 4 inches in diameter and contained about half a pint of thick blood-stained fluid. The specimen is in the Royal College of Surgeons Museum, where one or two similar specimens can be seen. He gives references to cases recorded in literature up to that date; further references are found at the end of this paper.

The size of these cysts varies considerably: Rolleston described one of the size of a cherry, and in Hartwell's case three quarts of dark reddish-brown fluid were removed.

Pathology.

Much has been written as to the true nature of cysts of the suprarenal: cystic adenomata, glandular cysts, serous and lymphangiomatous cysts, cysts depending for their origin on a primary haemorrhage into the gland (pseudocysts) have all been described. Terrier and Lecène give a useful classification in their paper. It is difficult to be positive as to the exact method of origin of the majority of these cysts as, when removed, they are often of large size.

Unless haemorrhage takes place into adrenal cysts in the course of their growth, the fluid will be found to be of an amber colour, as in the present instance; but, according to the records, haemorrhage occurs very frequently as these cysts increase in size, and this accounts for the dark reddish-brown contents usually found. Partly decolorized clots are often found adherent to the inner surface of the cyst. Haemorrhages into the adrenals have been found in the newborn, and Beadles has described extensive haemorrhages into these glands among inmates of asylums. Cysts of the suprarenal are found in the lower animals. It is well known that persons can remain in apparent good health in spite of the loss of one suprarenal capsule.

Symptoms.

Unless haemorrhage occurs into a suprarenal cyst it may grow until it reaches a considerable size before giving rise to any symptoms which cause a patient to seek advice. There may be only a sense of fullness in the side or vague dyspeptic symptoms without any pain; but, if haemorrhage takes place, then pain may be very severe and the patient may become seriously ill. The rate of growth may be very slow unless haemorrhages recur.

Diagnosis.

These cysts are most likely to be confused with tumours or enlargements of the kidney. It is remarkable how they tend to remain under cover of the costal margin in the hollow of the diaphragm until of large size, when they may be detected by palpation during inspiration. The kidney may often be felt below the cyst and then the diagnosis is much less difficult. Mobility from side to side is greater than from above down, and, as the cyst enlarges, it pushes the kidney downwards. A right-sided cyst pushes the liver towards the left; a left-sided one displaces the spleen and the tail of the pancreas. The size of the suprarenal may be so large as to extend across the abdomen to beyond the middle line and to reach downwards to the anterior superior iliac spine; the colon is pushed forwards, and the lower ribs may be bulged outwards. A hydatid cyst of the left lobe of the liver should be easily diagnosed from a right-sided adrenal cyst. One of the right lobe may cause great difficulty in diagnosis unless suppuration in the hydatid occurs, when other symptoms may arise which will make the diagnosis clear. A hydatid cyst of the spleen is much more mobile than a left-sided adrenal cyst. A pancreatic cyst is usually more centrally placed in the abdomen, and pathological examinations of the urine and faeces should aid the differential diagnosis.

Treatment.

Complete removal of the cyst is the right treatment to adopt and can usually be carried out. Some surgeons have explored these cysts through an incision in the rectus muscle or through one parallel to the costal margin. Difficulty has then been experienced in detaching the cyst wall from the structures in the neighbourhood of the spine, where it is usually most adherent. In these circumstances, after the removal of the anterior portion of the cyst wall, an attempt has been made to drain the posterior part through the anterior incision, with, in some cases, disastrous results because the attachment of the cyst to the edges of the incision has broken away.

Most surgeons who have tried a lumbar incision below the twelfth rib, as used for exploration of the kidney, have been quite satisfied with it, and I would suggest that it is the best to use. It can be extended forwards as far as necessary and, if thought desirable, the twelfth rib can be removed, as is not infrequently done in the course of a difficult kidney operation.

Evacuation of the cyst materially assists enucleation, and the lumbar incision then gives ample room and a full view during the dissecting away of the deeper portion of the cyst wall, which is the part of the operation where serious difficulty may be encountered.

Further, if for any unforeseen reason, such as dense adhesion to very important structures, or a sudden serious

condition of the patient, the deepest part of the cyst wall cannot be removed, then drainage through a lumbar incision presents no difficulty.

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EARLY AND CURABLE DISEASE OF THE BREAST.

BY

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(*With Special Plate.*)

SINCE the publication of my article on the proemial breast in the BRITISH MEDICAL JOURNAL of June 3rd, 1922,* I have gained valuable information on the interpretation placed upon it by many of my readers. They have asked whether the breasts of patients whom they have sent to me were in what I termed the proemial state. From them I have been able to select instances of diseased breasts in stages which, under proper treatment, can be saved from becoming examples of the established proemial condition.

The most typical conditions of an early and curable disease are exemplified in one of my own patients. She was 26 years old, single, by occupation a saleswoman. At the time of the consultation her tongue, teeth, tonsils, bowels, and urine were normal. The breast had not been injured by a blow, and her stays were not high enough to touch it in any position which she assumed. The left breast was normal. She had complained of pain in the upper and outer segment of the right breast for three and a half months; the pain was increased at the time of her periods.

Palpation revealed an irregularly swollen duct which could be traced from the ampulla in the areola region to the part towards the periphery, where the gland was more tender than elsewhere. On observation of the nipple three minute raised yellowish dry spots could be seen, situated at the upper and outer margin of the nipple, and I concluded that probably one of them was the exit of the duct which belonged to the affected segment of the breast. I believed them to be points of exit of ducts which were plugged with dry epithelium and excretions, either from the breast or from the sebaceous glands which open into the outlet of the duct (Special Plate, Fig. 1). Acting on this belief I advised the woman to carry her arm in a sling and to put hot fomentations on the breast; but the most important part of my treatment was to make sure that she constantly soaked the nipple with hot sterilized water applied with cotton-wool. This treatment was continued for fourteen days until the plug in the outlet of each duct was macerated enough to enable me to remove it by wiping away the film that covered it, and by gentle pressure to squeeze it out. In two months the breast gradually became normal. I then advised her to keep the nipples clean always, by means of the same process, and to avoid all kinds of soap, powder, methylated spirit, hydrogen peroxide, and so on, for fear of irritating or plugging afresh the outlets. If soap be not properly washed away it dries and cakes and fills the outlet. In addition to this it must be realized that soaps are irritating and some brands more so than others.

My interpretation of the state of affairs in this woman's breast was as follows. The presence of the plug was detrimental in many possible respects—for instance, as an irritant it might have encouraged the local action of non-virulent micro-organisms upon the epithelial lining of the duct outlet, and in consequence the whole duct might have suffered a mild infection, or the products of a mild infection might have been disseminated in the same directions. The observations of Mr. A. J. Walton in 1914 and 1915[1] and those of Dr. A. H. Drew[2] suggest another possible explanation—that the products of epithelial irritation created by the plug in the duct outlet caused changes in the epithelium throughout the distribution of the duct and acini. My belief is that the change was probably a desquamative hyperplasia of epithelium which distended this duct and caused the woman pain. I further believe that similar treatment applied to the breast in this early stage of disease will prevent it from becoming an established proemial breast. Thus the prevention of disease in the care of the breast can be taken a step further back than the proemial state.

Many authorities seem able to connect changes in a sebaceous gland with plugging at the outlet of its duct, but do not seem able to connect changes in the breast with a plugged outlet of a mammary duct. I do not understand why there should be this difference, and it is all the more incomprehensible when it is realized that many sebaceous ducts open into the outlets of a mammary duct (Fig. 2), so that any detrimental discharge from these sebaceous glands would open direct into the mammary duct at this point. In addition to this anatomical feature, there is this fact: in a previous article on cysts and primary cancer in cysts of the breast,[3] I pointed out the consummate ease with which foreign material is distributed throughout the ducts of the breast when once entrance be gained. Further, to show what a definite pathway for entrance there is, I draw attention to the anatomical section in Fig. 2, which shows a complete duct in the nipple and the outlet on the surface. The duct lumen is seen distinctly throughout its course. The duct widens at its outlet, into which enter the openings of many sebaceous glands. To all intents and purposes each duct system of the breast may be regarded as a separate gland. This notion may create a doubt in the minds of those authorities to whom I have alluded.

It is essential that women should keep these duct outlets free from plugs. I say this for another reason: I have in my possession whole sections of a breast affected with the earliest Paget's disease of the nipple I have seen. Only half the top of the nipple is affected by the disease. There is no carcinoma in the deeper parts of the breast. The main focus of the disease is in a plugged duct outlet, from which the process is spreading into the duct and on to the surface of the nipple. Epithelial cells are invading deeper tissues and have entered lymphatic vessels. It is a typical case of Paget's disease of the nipple, and this section, together with many other reasons, convince me that Paget's disease of the nipple is carcinoma from the beginning. This is another investigation, on the writing of which I am at present engaged. I mention it here to emphasize the importance of keeping duct outlets clean and free from irritating agents.

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[3] *British Journal of Surgery*, vol. viii, No. 30, 1920, Figure 113.

* See also the *British Journal of Surgery*, April, 1923, p. 436.

POLYTHELIA.

BY

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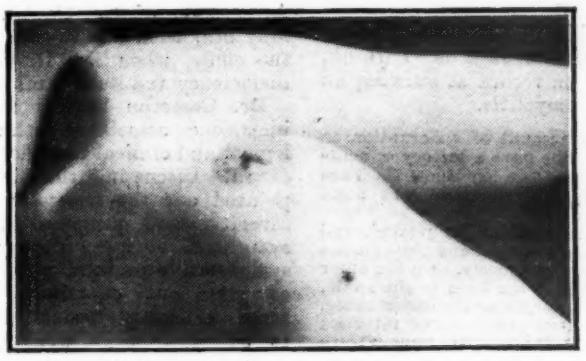
CASES of polymastia (supernumerary breasts) are not uncommon. Goldberger[1] makes mention of some 262 such cases. Williams (Baltimore)[2] says: "Probably one in every few hundred women has one or more accessory breasts," and points out that the condition is usually regarded as an atavistic reversion, though it is not associated with any increased tendency towards multiple pregnancy. Ahlfeld,[1] on the other hand, holds that the distribution of the mammary tissue is to be attributed to the transference at an early period of development, by means of the amnion, of some of the cells which ordinarily go to form the breasts to other

portions of the body. When polymastia occurs the supernumerary nipples are usually functionless. In numerous instances an hereditary influence has been traced.

Polythelia is a very much rarer abnormality. In fact, with the exception of occasional allusions to the condition, I have been unable to find any report of an authentic case in medical literature. In November, 1921, I reported in this JOURNAL a case of polythelia, in which the accessory nipple functioned; it occurred in my private practice. Since then I have been fortunate in securing the accompanying plate illustrating the case.



The woman, a primipara, aged 23, first recollected noticing the accessory nipple in early childhood and regarded it as a fleshy mole. It is about the size of a sixpenny piece, and is situated close to the left mammillary line in the inferior half of, and towards the periphery of, the left breast. It resembles the normal nipple of the same breast in everything but size, possessing lactiferous ducts and erectile tissue. Even Montgomery's secondary areola is faithfully reproduced. There is no macroscopical evidence of a supernumerary breast. The right and left breasts are symmetrical except for the small accessory nipple on the latter, and no demarcation of the gland tissue could be distinguished by inspection or by palpation. The condition has caused the woman no discomfort other than that, during the period of lactation subsequent to her pregnancy three years ago, there was a very free secretion of milk from the secondary nipple as well as from the normal nipples, the medical practitioner then attending her having dissuaded her from nursing the child.

There is no evidence of any hereditary influence. The woman, who is one of a family of eleven children, is the only one exhibiting this abnormality.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACUTE OEDEMA OF THE LUNGS.

ACUTE oedema of the lungs is one of the most striking and terrifying emergencies with which the practitioner may be called upon to deal. The most tragically celebrated case on record is that of Charcot himself. During a journey he was seized with a sudden attack of suffocation, expelled a quantity of frothy albuminous fluid, and died in half an hour. Often the sufferer is dead before the doctor gets to him, and is found lying with an abundant frothy pinkish exudation filling the mouth and nose.

On February 23rd, 1923, on the R.M.S.P. *Desna*, I was called hurriedly about midnight to a gentleman taken suddenly ill. During the evening he had been well, dining in the saloon with the rest of us. I did not know then that he had not been in good health, but learnt subsequently that he was suffering from arteriosclerosis, or what I would prefer to call cardio-vascular breakdown.

On reaching the cabin I found him standing up struggling for breath, and bringing up an enormous quantity of frothy soapsuddy expectoration, coughing it up, and brushing it away from his nose and mouth with his fingers. There was no time to make exhaustive inquiries; but his wife said he was 56, and that it was his first attack. The pulse was small and rapid, and owing to the râles in the chest the heart sounds could not be heard. Even during this rapid examination he became very much worse, and it was clear that unless something was done quickly the first attack would also be the last. I ran to the surgery for a knife and a bandage, picking up a steward on the way to help me. On again reaching the cabin the patient had fallen back exhausted but was still conscious. We put the bandage round his right upper arm, and cut across the first vein easy to get at. This was probably the anterior ulnar; the branches of the median are best avoided when in a hurry. He bled freely, the blood being at first very dark, although his face was pallid. I bled him well over a pint, and it was most gratifying to watch the change. The vivid colour and dyspnoea disappeared, the expectoration gradually ceased, and his dreadful anxiety passed off. At the end of the bleeding breathing, colour, voice, mental attitude, and pulse were all reassuring. It was surprising how the pulse improved; it was not necessary to inject camphor. Incidentally, why is camphor in oil so much used, when a saturated solution of camphor in alcohol is so much more convenient? I have used the latter for years and never found any disadvantage, and a much larger dose can in this way be given.

The patient did well afterwards; he was kept rigidly in bed on a spare milk diet until Liverpool was reached.

Neither the diagnosis nor treatment was difficult. As to the former, asthma, cardiac dyspnoea, angina pectoris, and pulmonary infarct might occur to one's mind, but the extraordinarily abundant frothy expectoration, coming on quite suddenly, was decisive. The acute oedema is evidently due to a condition of vascular engorgement in the pulmonary area, and partially draining the systemic veins gives the right ventricle time to deal with it.

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SINUS THROMBOSIS FOLLOWING PNEUMONIA IN AN ADULT.

THE following case appears to be of interest on account of the difficulty presented in the diagnosis, and because the condition is unusual in the adult.

A woman, aged 35, was admitted under Dr. A. Stanley Barnes on April 11th, 1923. A letter from her doctor explained that on March 31st she was taken ill with symptoms referred to the respiratory system, and that when he saw her for the first time, on April 2nd, she had a dry cough and pleuritic pain in the left side. Next day it was evident that she had lobar pneumonia affecting the left base. The crisis occurred on April 7th; on April 9th the temperature, pulse, and respirations were normal and the patient felt so well that she asked to be allowed to get up. During the following night, however, she complained of severe headache and vomited several times; early next morning, while sitting up in bed, she had an epileptiform convulsion which left her with left hemiplegia.

On admission, some twelve hours later, she was in a semi-comatose condition, but could be roused sufficiently to speak a few words. The temperature was 97° F., the pulse 48, and the respirations 20. There was left hemiplegia with an extensor plantar reflex on that side, while the other plantar reflex was flexor and both knee-jerks were somewhat brisk. There was complete incontinence of urine. There were no retinal changes suggesting vascular disease, and except for the brachycardia no abnormality in the circulatory system was detected. The lungs also appeared normal.

A diagnosis of cerebral embolism was made, although it was realized that this would not account for the headache and vomiting prior to the convulsion.

On April 12th, about twenty-four hours after admission, she suddenly became worse. The face was flushed, the breathing stertorous, the coma more profound, and some weakness with an extensor reflex appeared on the right side. Lumbar puncture was performed, and 50 c.cm. of fluid under considerable pressure and deeply tinged with blood were withdrawn. On April 13th the temperature had risen to 100.5°, and lumbar puncture again yielded a blood-stained fluid. It was concluded that haemorrhage had taken place at the site of embolism.

The condition of the patient rapidly grew worse, the temperature fell below normal, the pulse rate rose to 136, and death occurred the same night.

At necropsy the heart (300 grams) was found soft and flabby, and considerable fatty infiltration was present in the muscle of the right ventricle. There was a slight degree of mitral stenosis, but no thrombi were present in the auricles and no vegetations on the valves. The aorta was normal. The lungs were intensely congested and oedematous. There was extensive *ante-mortem* thrombosis in all the dural sinuses and in many of the cortical veins, especially near the vertex. The surface of the brain was intensely congested and a considerable amount of free blood was seen in the meshes of the pia arachnoid. On section large areas of brain substance showed the condition of red softening. The largest, on the right side, involved the optic thalamus, the genu of the internal capsule, the lenticular nucleus, and the caudate nucleus, so extending into the lateral ventricle. A second area, 1 inch in diameter, was situated in the right frontal lobe, while yet a third affected

the left caudate nucleus. Small petechial haemorrhages in the substance of the brain and thrombosis of the veins of Galen completed the picture.

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ATROPHY OF THE SKIN AFTER POLIOMYELITIS.

THE following case of atrophy of the skin is, I think, sufficiently interesting to be placed on record as showing an apparently rare sequel to an old poliomyelitis.

Mrs. S., aged 36, came to see me on account of an eruption on the left leg of several weeks' standing. She gave a history of acute poliomyelitis at 2 years of age, after which the leg below the knee was practically paralysed. At the age of 22 there was some recovery of the calf muscles.

On examination, the calf muscles were considerably wasted, and several scars on the foot showed where operations for tendon transplantation had been done many years previously. On the outer side of the leg, extending from a little below the knee to the ankle, was a diffuse erythema of the skin, and purple and crimson areas. The discoloration completely disappeared on pressure and returned very rapidly—evidently a vasomotor disturbance. The temperature of the skin varied at different examinations, being in a condition of poikilothermos. The affected skin was thin and shiny; the lower parts were swollen with oedema, while other parts were dry and scaly owing to the atrophy of the sebaceous glands. The patient complained of dull aching pain and "tingling" sensation.

I found sensation greatly modified or entirely absent. Epicritic sensation was absent. Protopathic sensation was present for touch, but there was definite thermo-anaesthesia. The response to variations in temperature was interesting, as it closely resembled that obtained in a typical case of syringomyelia. There was absolute absence of appreciation between heat and cold. Moreover, stimuli normally giving rise to pain produced little or no response.

Apart from the old poliomyelitis there were no signs of any other disease of the nervous system, and I subsequently asked Dr. MacCormac, dermatologist to the Middlesex Hospital, to see the case. He agreed with me as to the diagnosis, saying: "I think there can be no doubt but that the condition is a trophic one associated with the old poliomyelitis."

Unless the two conditions have no relation to each other, is it not rather strange that a sensory disturbance of the skin should follow poliomyelitis? The former is probably the result of some degeneration in the posterior roots in the lumbar portion of the spinal cord, while the latter is due to a lesion actually in the grey matter of the anterior horn of the same segment. It is noteworthy, moreover, that the skin atrophy should have appeared after such a comparatively long interval of time as thirty-four years.

London, E. A. ROBERT FOX, M.R.C.S., L.R.C.P.

RUPTURE OF PERIANAL SKIN CAUSED BY A FALL UPON THE FEET.

THE following note of an accident which seems to be an unusual one in the human subject may be of some interest. A man, while riding upon a fire engine which was travelling at some speed, was thrown violently to the ground, landing upon his right foot. The impact was sufficient to cause a very bad compound, comminuted fracture of the right leg. When he was undressed at the hospital, the nurse noticed that there was something wrong with the anus, although no complaint of pain or injury had been made by the patient. On examination I found that the skin had been torn from its attachment to the mucous membrane throughout the whole circle of the sphincter, except for about a quarter of an inch on the left side posteriorly. The skin, showing all the perianal corrugations, had retracted from the anal margin, leaving the subcutaneous tissues bare for an inch or more from the anus. There was no bruising, and there had been very little bleeding. The trousers were not torn nor was there any evidence of his having been struck by anything in that region. I think the injury may have been caused by the sudden and very violent pressure upon the pelvic floor, due to the man's impact with the ground in the standing position. The muscular structures guarding the pelvic floor were taken unawares and overpowered, and the perianal skin so stretched as to be completely torn from its attachments around the anal margin.

The condition is well known to veterinary surgeons, as occurring occasionally in horses when landing on hard ground after jumping. It would be interesting to know if the condition is recognized as occurring also in men.

Nuneaton. E. N. NASON.

Reports of Societies.

RENAL INEFFICIENCY.

A MEETING of the Cardiff Medical Society was held on May 8th, with the President, Professor E. J. MACLEAN, in the chair, when Dr. R. CAMERON read a paper on renal inefficiency and its clinical detection.

Dr. Cameron limited the scope of the subject to the inefficiency associated with chronic nephritis, into the pathological and clinical classification of which he entered in some detail. Discussing the diagnosis of chronic nephritis, he pointed out the necessity for investigating the presence, severity, and progress of general clinical signs, renal symptoms, such as dropsy and uraemia, cardio-vascular symptoms, especially high blood pressure, in addition to carrying out examination of the urine and certain renal efficiency tests. The general clinical symptoms to be noted were weakness, loss of flesh—which might be masked by oedema—severe headaches, vomiting, and gastro-intestinal symptoms, recurring attacks of bronchitis and oedema of the lungs, with shortness of breath. In addition, there might be added symptoms indicative of kidney mischief—for example, dropsy, uraemia, and cardio-vascular changes; retinitis was present in 15 to 20 per cent. of cases. While the time-honoured clinical methods were still the sheet anchor in the investigation of the presence and gravity of renal disease, a most important new field had been opened up by the introduction of certain chemical tests—chiefly the diastase test, the urea concentration test, the blood urea test, and the urea concentration factor. In regard to treatment, it was important never to overwork a diseased organ. In renal disease the teaching had been to deny almost entirely protein food, since the kidneys were the organs which were chiefly responsible for nitrogenous excretion. In acute nephritis, where the functions were almost entirely suspended for a limited period, it was reasonable to carry out that rule; but in the chronic interstitial kidney—the azotaemic type—the kidney could excrete its nitrogen so long as not more than 94 grams of protein were taken in a day. Chittenden, the apostle of nitrogenous economy, said that 60 grams were necessary to maintain nutrition, therefore at least 60 grams should be taken, which allowed a balance of 34 grams. Large quantities of protein could be given in the hydraemic type, as it lessened the dropsy, was found to be well borne, and altered the whole outlook in life for the patient, who had hitherto been starved to no purpose. On the other hand, if the patient were dropsical and also showed signs of uraemia, it was safe to have a urea concentration test done repeatedly before loading his blood with amino-acids, the precursors of nitrogenous waste; a certain amount of protein he must have to replace tissue waste, but not too much to overtax his renal power.

Cavernous Angioma of the Face.

Mr. D. J. HARRIES showed a large cavernous angioma of the face, in a man aged 24 years.

The condition was present at birth and had gradually got bigger; it now occupied an area corresponding to the sensory distribution of the third division of the fifth nerve on the left side. It involved the whole thickness of the left cheek below the level of the angle of the mouth, the left lower lip, and the anterior two-thirds of the left half of the tongue, and there was an offshoot running upwards in front of the ear. In April, 1923, the left external carotid artery and all the veins running down from the left side of the face were ligated; two weeks later the opposite side was similarly treated, and this had reduced the mass to about two-thirds of its original size. Mr. Harries intended to show the case again, after trying the effects of electrolysis. The case was interesting in that it suggested that the growth of the angioma might be controlled by the sensory branches of the third division of the fifth nerve; its extent could not be explained in terms of vascular or vasomotor distribution.

A MEETING of the London Association of the Medical Women's Federation was held at the Elizabeth Garrett Anderson Hospital on May 15th, with the President, Dr. LOUISA MARTINDALE, in the chair. Dr. OCTAVIA LEWIN, in a paper on personal hygiene and its place in school teaching, said that the subject was many-sided, embracing the physical, mental, spiritual, moral, social, domestic, and racial aspects of humanity, and that the problems were different in succeeding

decades of the individual's life. She gave instances that had come under her notice of inadequate provision of facilities for personal hygiene. These included insufficient lavatory accommodation in schools, absence of handkerchiefs and of the knowledge of their use, overtight clothing, and indiscriminate kissing of children even when suffering from infectious diseases. Dr. Lewin discussed the various sources from which education on personal hygiene might be expected, such as the parents, the teachers, the public libraries, and the press. In the *Encyclopaedia Britannica* at the British Museum the pages dealing with disease were so thumb-marked as to be almost illegible. She also showed cuttings of the quack medicines advertised in one issue of a daily newspaper, which were so numerous as to cover a whole sheet of the paper. A discussion followed, in which Drs. JEVONS, PARSONS, FAIRFIELD, WILSON, ELMSLIE, HANSON, LANE-CLAYPON, HUTCHINSON, and HANDLEY-READ took part.

Rebiews.

INDUSTRIAL HYGIENE.

WHEN in 1895 Sir Matthew White Ridley, then Home Secretary, had the courage to depart from precedent and appointed Dr. (now Sir) Arthur Whitelegge, who was then medical officer of health for the West Riding, to be Chief Inspector of Factories, he probably did not fully realize the importance of his action. It was the first step in the practical application of preventive medicine in relation to industrial diseases. Dr. Whitelegge was extremely fortunate in his selection of Dr. T. M. Legge as the first medical inspector of factories; to his painstaking labours the workers in many industries are indebted for decreased incidence of certain diseases, and in some cases for actual immunity. His pioneer work undoubtedly stimulated others to labour in the same direction, and now industrial hygiene is recognized as an integral part of preventive medicine.

Medical officers of health will welcome *Industrial Hygiene and Medicine*[1] written by Dr. E. W. HOPE, M.O.H. for the city of Liverpool, in collaboration with two of the assistant medical officers, Dr. W. HANNA and Dr. C. O. STALLYBRASS. The introductory chapters contain an account of factory legislation in this country, and of the efforts made in the early part of the nineteenth century to improve the conditions of industrial workers. It is significant that legislation was at first directed to the shortening of the hours of work of children and young persons under 18 years of age. Later on efforts were made to prevent accidents by the fencing of machinery and in other ways, and to improve the general health of the workpeople by attention to the ventilation of workshops and to their general sanitary conditions.

Although the conditions had been studied early by a few medical pioneers, it was only in the closing years of the century that definite knowledge was won of the causes of certain diseases found to be incident to particular industries, and with this knowledge, attained by careful and prolonged investigations, it speedily became possible to make appropriate proposals for their prevention. These causes and preventive measures are discussed by the authors very fully and clearly, as will be seen from the headings of some of the chapters—industrial poisonings and their effects; dust as a cause of disease; industrial infection; and occupational affections of the skin and special senses. The chapter on industrial physiology sets out very clearly the present-day views of competent observers on this most important subject—important not only to the individual worker, but to the community generally. As is well known, the study of industries shows that in many a break in the ordinary spell of work has been followed by greater output, and the authors express the opinion that a four-hour spell of work is as long as can be endured without unnecessary fatigue. If, they say, a ten-hour day must be worked, it should either be divided into three spells, or, perhaps better, into two spells, each divided by an interval of fifteen minutes.

In a very informing chapter on industrial welfare schemes details are given of several which have been in existence for some years, and advice is offered as to the best way to inaugurate and carry on such work. It is rightly insisted that the personality of the welfare supervisor is of the greatest moment. Neglect of this consideration may wreck the most carefully designed scheme. Quite appropriately in a work of this character a few pages are devoted to the question of workmen's compensation, and in an appendix will be found an epitome of British legislation affecting industrial hygiene, and the memorandum issued a few years ago by the Home Office on the duties of local authorities under the Factory and Workshop Acts. The duties of certifying surgeons are also included in the appendix.

A large number of well executed illustrations add to the value of the work. The bibliography at the end of each chapter is very complete and is evidence in itself of the immense labour entailed in the compilation of the volume. It is an excellent example of what can be done by steady team work. Indeed it is marvellous that so much information could have been brought together by three busy medical officers of health engaged in the public health administration of a large city and port. Their reward must be in the knowledge that they have produced a textbook which will take a distinctive place in the literature on industrial hygiene.

[1] *Industrial Hygiene and Medicine.* By E. W. Hope, O.B.E., M.D., D.Sc., in collaboration with W. Hanna, M.A., M.D., D.P.H., and C. O. Stallybrass, M.D., D.P.H. London: Baillière, Tindall and Cox. 1923. (Demy 8vo, pp. 766; 123 figures. 21s. net.)

NATIVE COMPOUNDS IN TROPICAL AFRICA.

DR. ARTHUR PEARSON, the circumstances of whose tragic death we recorded last week, had recently written a book in association with Dr. R. MOUCHET on the *Practical Hygiene of Native Compounds in Tropical Africa*,[2] based on experience gained by eighteen years of work in the Katanga. As the authors state in their introduction, it does not profess to deal with tropical hygiene in general, but only with its application to native compounds under the conditions met with in tropical Africa.

The first section, consisting of nine chapters, deals with the various aspects of the hygiene of compounds. It is difficult to assess the degree to which a native increases his risk of life by changing his village home for a compound; the authors believe that in the compounds of most industrial undertakings in tropical Africa the death rate reaches a higher level than that which the village would show if the true figure could be obtained for adult natives of working age, when especially they are tenanted by men who are for the first time brought into contact with Europeans and European standards of work. The degree of increase in risk to which the native is subjected is dependent on a number of factors, some of which it is within our powers to control, and it is these the authors discuss in their opening chapter, which deals with general considerations touching upon the native and compound life. As the result of a very interesting analysis of native life under natural conditions in his village, the authors reach certain general principles, relating chiefly to ensuring that the living conditions of the native are kept up to a certain standard as regards his dwelling hut, and to the importance of providing a diet ample in quantity and of sufficient variety; stress is laid on the necessity for attention to all details which may tend to diminish the pathogenic virulence of a compound environment, or which may serve to prepare and strengthen native recruits against this new environment. It is with the methods of application of these principles that the main bulk of the volume is concerned. Four chapters are devoted to the general situation and arrangement of compounds, to the types of construction, to the latrine arrangements and sewage disposal, and to the water supply. Each of these sections is illustrated by a number of admirable photographs and diagrams.

The authors distinguish between the diet and feeding of natives, because each presents distinct problems; by diet they refer to the composition of the rations issued, and by feeding to the manner in which the issue is made and the arrangements provided for consumption of food. This large and very important subject is treated in considerable detail, and the personal observations made by the authors in the Katanga compared with the results of experience on the Rand.

[2] *Practical Hygiene of Native Compounds in Tropical Africa. Being notes from the experience of the first eighteen years of European work in the Katanga.* By A. Pearson, M.B., B.S.Lond., and R. Mouchet, M.D. London: Baillière, Tindall and Cox. 1923. (Cr. 4to, pp. xiv + 188; 49 figures, 44 plates. 22s. 6d. net.)

The next chapter deals with the maintenance of cleanliness. The authors state that a very excellent rough estimate of the cleanliness of a compound may be made by noting the number of flies, and they add: "If we were asked to name the two chief causes of mortality in the Katanga compounds, we would cite pneumonia and flies." Under this general heading such matters as cleanliness of the compound area and of the hut itself, attention to accessory installations, disposal of refuse, and provision for personal cleanliness are discussed. In dealing with hospital organizations, the authors consider the position, construction, and arrangement of the buildings and the organization of care for the sick. In a compound hospital the majority of beds provided should be placed in large wards; a useful method of distribution of beds (for every thousand natives in a compound) was found to be—36 beds in large wards, 12 beds in small wards, and 4 beds in isolation wards, giving a bed ratio to compound population of 5.2 per cent., which is ample in ordinary times. The authors remark that quite early in their work they noted that patients with pneumonia did better on the verandah than in the interior of the comparatively ill-ventilated ward of ten years ago. This conviction led to the design of a special type of ward, the essential feature of which is that the brickwork of most of the wall is not carried more than 1.2 metres above the ground, the space above being protected by mosquito wire gauze, so that the ward is practically an open-air shelter; in order to prevent driving rain from reaching the gauze, the roof is prolonged to provide a wide verandah shelter.

It has long been recognized both in South Africa and in the Katanga that the highest mortality is found among natives who have been recently recruited, and that the danger is greatest when the recruiting is from a race which has not previously worked in a great industrial centre. The various factors conducing to this special susceptibility are analysed and suggestions made with a view to meeting the difficulties which arise.

The second section of the volume contains two chapters: the first deals with the epidemic diseases of tropical compounds and the second contains a few pathological notes.

The book is full of interest, and contains much valuable information, and can be heartily commended. As Balfour states in the preface he has written for it, "there has been an urgent and increasing need for a good book in English, dealing with the sanitation of native compounds," and there can be no doubt that this work will receive the warm welcome which it certainly merits.

BOTULISM.

UNTIL August, 1922, little active interest was taken in these islands in the subject of botulism. The public health student associated it with sausages on the continent of Europe and with bottled olives and similar articles in the United States of America, especially in California. He never expected to see, in this country at any rate, instances of the disease. The occurrence of eight cases, all fatal, in the Loch Maree tragedy was fully recorded in our columns at the time (August 26th, p. 394, September 9th and 16th, pp. 481 and 527). Dr. GERALD LEIGHTON has now written a book entitled *Botulism and Food Preservation*[3] in which much of the existing knowledge on the subject is well set out. For fuller details he refers the reader to a copious bibliography and to his official report to the Scottish Board of Health (1923). He has written not only for the medical profession but also for those interested in the preserved food industry and for "the intelligent educated general reader."

Before relating the incidents at Loch Maree the author, after stating the nature of botulism, gives its history, cause, symptoms, treatment, and prevention, in successive chapters. Some interesting remarks, based on the valuable work of Professor K. F. Meyer of California, are made on the world-wide distribution of the spores of *B. botulinus*. The part played by the spores, and the two types (A and B) of the bacillus and their toxins, in the causation of the disease is clearly and fully described. Of 64 samples of English soil examined by Professor Meyer—before any case had been known in these islands—five were found to contain *B. botulinus*. From his researches in California he concluded that the bacillus type A is predominant in virgin soil and that type B is relatively frequent in more cultivated soils. The Loch Maree outbreak was due to type A occurring in a pot of wild-duck paste prepared in England.

The chapter on allied animal diseases, such as "limber neck" in fowls (United States of America), "grass sickness" in horses (parts of England and Scotland), "forage poisoning" in horses (Australia), and "Borna disease" in horses (Germany), is of much interest.

The arrangements made by the Medical Research Council in conjunction with the Ministry of Health to afford facilities in the University of Bristol for the examination of specimens from outbreaks of food poisoning of any kind not only in England and Wales but also, with the co-operation of the Scottish Board of Health, in Scotland, worked well when the Loch Maree outbreak occurred, and the services of the research workers at Bristol and their special knowledge of the causes of food poisoning of all kinds proved very valuable. The co-operation of workers in the Wellcome Research Laboratories on the causes of grass sickness enabled botulinus antitoxins to be obtained for identification of the type of bacillus isolated from the Loch Maree specimens. It is fortunate that types of botulinus antitoxin had already been prepared, though, as it happened, not in connexion with a human outbreak of botulism. For the lay reader especially there is a useful chapter entitled "Answers to questions" based on many inquiries as to the causes and prevention of botulism which have been put to the author.

Dr. Leighton gives the reassuring opinion that if certain necessary and relatively simple precautions be taken by all concerned it is extremely unlikely that other outbreaks of botulism in these islands will occur. He is to be congratulated on having collected so much information on this subject and on having put it into an interesting and readable form.

BIOCHEMISTRY IN RELATION TO PHYSIOLOGY.

MR. T. R. PARSONS, in his foreword to the *Fundamentals of Bio-chemistry in Relation to Human Physiology*,[4] explains that the object of his book is to give a short account of the more important principles of biochemistry which have been derived from the study of the chemical changes occurring in the human body. The book, he says, has been written as simply as possible so as to demand a minimum of previous knowledge of pure chemistry and of physics.

Biochemistry is naturally a very difficult subject to explain in a simple manner, but Mr. Parsons has succeeded in setting forth the salient principles of the subject in a remarkably clear and simple fashion. His experience as Demonstrator in Physiology in the University of Cambridge has helped him to adapt his book to meet the needs of students beginning the study of biochemistry and also of those medical men who may have forgotten most of their theoretical chemistry and wish to refresh their knowledge of the general principles of biochemistry. The first eleven chapters give a short account of the chemistry and metabolism of proteins, purins, fats, and carbohydrates; then the more general problems of metabolism are dealt with, and the concluding chapters are devoted to certain problems in physical chemistry.

The book is a short account of what the author considers are the salient facts of the subject. The selection must of necessity be arbitrary and no two writers would make identical selections, but nothing has been included in this volume that is not of real importance.

One of the most interesting chapters is that dealing with the mechanism of muscular contraction. A very clear account is given of the important recent discoveries as to the mode in which carbohydrates are utilized to provide energy for muscular contraction. This chapter concludes with a most interesting comparison between the muscle and an internal combustion engine. The author is to be congratulated particularly upon the clearness and brevity with which he deals with such problems of physical chemistry as

[3] *Botulism and Food Preservation (The Loch Maree Tragedy)*. By G. Leighton, M.D., F.R.S.E., Medical Officer (Foods), Scottish Board of Health. London and Glasgow: W. Collins and Co., Ltd. 1923. (Med. 8vo, pp. xiii+237; 10 plates. 10s. net.)

[4] *Fundamentals of Bio-chemistry in Relation to Human Physiology*. By T. R. Parsons, B.Sc.Lond., M.A.Cantab. Cambridge: W. Heffer and Sons, Ltd. 1923. (Cr. 8vo, pp. x+281; 23 figures. 1 plate. 10s. 6d. net.)

polarization, the reaction of fluids, osmotic pressure, and the properties of colloidal solutions. We do not remember ever reading a simpler and more concise account of the elementary facts regarding these difficult subjects.

The two chapters which are, perhaps, most open to criticism are those on vitamins and protective synthesis. The author tries to deal with vitamins in five pages, which is really an impossible effort at condensation. So many facts concerning vitamins are still uncertain that generalization on this subject is very difficult. The statement made on page 185 that the fat-soluble vitamin is present in most natural oils is obviously a slip. This vitamin is either absent from most natural vegetable oils or present only in minute traces. The chapter on protective synthesis in the body is also very brief, and it seems questionable whether it was worth while including so short an account of such a scattered subject.

These, however, are points of relatively small importance, and our general opinion of the book is that it is of a type that deserves a particularly hearty welcome. The present tendency of science seems unfortunately towards infinite subdivision by partitions of special vocabularies and refinements of technique. A book like the one under review, which makes the general principles of a difficult subject available for the first time to a large circle of readers, really plays an important part in the development of scientific knowledge.

THE SUN CURE IN TUBERCULOSIS.

THE appearance of *Heliotherapy*[5] will be welcomed by all who are interested in what is called surgical tuberculosis, and have heard of its successful treatment by Dr. ROLLIER in his clinic at Leysin on an Alp at the eastern end of the Lake of Geneva. Knowledge of his method of insolation has already been available in numerous articles in Continental and British journals, and in *La Cure de Soleil* (see BRITISH MEDICAL JOURNAL, 1915, i, p. 936), which gave a more complete and systematic account; but in the volume before us the method is for the first time fully described in English. It would be difficult to praise too highly the way in which Dr. Rollier has presented his case. His clear account of the technique of graduated exposure of the body to the sun-rays; the detailed case-records of tuberculosis of every region of the body, illustrated by photographs and radiographs before and after treatment; the careful descriptions of splints and other immobilizing apparatus; the indications for operative intervention (how few they are!); the cases unsuitable for the sun cure; the emphasis on the combination of work and play as an important mental tonic; and finally the presentation of his analysed statistics (over two thousand cases of surgical tuberculosis) from 1903 to 1921—all these different parts of the subject are unfolded in a clear and orderly way which will enable anyone not previously familiar with the subject to grasp essentials, and those possessing a competent knowledge to examine the evidence critically and to draw their own conclusions. There follows a chapter on the scientific basis of heliotherapy which widens into a discussion of the physics of light and its biological action upon human tissues. This is from the pen of Dr. A. ROSSELET, who has long been closely associated with Rollier at Leysin. Finally there are chapters on radiological diagnosis and on radiotherapy and phototherapy.

Dr. Rollier emphasizes the association of good pigmentation with good prognosis, and gives detailed rules for the graduated exposures until the whole body can safely be bared to the sun-rays. He seems to hold that the conditions for this insolation are better in winter than in summer. In winter the whole day, with its brilliant sunshine and cold dry air, is available; while during summer often only the morning hours from six to nine may be used. Both he and Dr. Rosselet admit that besides the action of light other factors may be at work—the tonic effect of cold dry air upon the body surface and the influence of rest; the insistence on the work cure shows that the value of the mental factor is appreciated. The statistics for 1914-1921 are that of 2,167 cases of bone and joint tuberculosis 1,746 were healed.

We could only wish that *La Cure de Soleil* might have been translated into its obvious English, "The Sun Cure" instead of the clumsy pseudo-Greek "Heliotherapy."

[5] *Heliotherapy.* By A. Rollier, M.D., with the collaboration of A. Rosselet, D.Sc., M.D., H. J. Schmid, M.D., and E. Amstad, M.D. With foreword by Sir J. H. Gauvain, M.A., M.D., and C. W. Saleeby, M.D. Oxford Medical Publications. London: H. Frowde, and Hodder and Stoughton. 1923. (Demy 8vo, pp. xxii + 288; illustrated. 25s. net.)

GUY'S HOSPITAL REPORTS.

THE second quarterly instalment of this year's volume of the *Guy's Hospital Reports*[6] is rather unusual in containing contributions on subjects recently much to the fore in its pages from men who are not members of that hospital school. Thus Dr. Adolphe Abrahams provides a note on occult blood in the faeces as a commentary on Dr. J. R. Bell's paper in the last number, which is also supplemented by Drs. Ryffel and Payne's article on the spectroscopic test for blood in the stools based on work in the Laboratory of Clinical Chemistry at Guy's. Professor Harvey Cushing describes the clinical features of intracranial aneurysms as a companion article to that of Dr. C. P. Symonds, who worked under him at this subject at Boston and correctly diagnosed a case before death. There is a joint account of two cases of Addison's anaemia; one with all the characteristic features had gastric carcinoma also, and thus fulfilled Drs. A. F. Hurst and J. R. Bell's anticipation that if subacute combined degeneration of the spinal cord is found in association with gastric carcinoma it would be among the 50 per cent. in which complete achlorhydria is present throughout the period of digestion. The other case is commented on by Dr. William Hunter as an example of septic anaemia rather than Addison's anaemia. Dr. G. W. Nicholson's instalment of his studies on tumour formation is devoted to the argument that so-called renal hypernephromas arise from the renal cells, and not, as Grawitz stated, from displaced adrenals, and that they do not lend any support to Colmheim's theory of tumours. Like his previous papers this one is rich in original observations, ingenious argument, and knowledge of the literature. Dr. F. A. Knott, bacteriologist to the New Lodge Clinic, shows that hexamine is an active biliary antiseptic and that the bacteria in the bile cause a local rise in acidity around them up to a point at which a small amount of free formaldehyde may be expected, and that then the bacteria cease to multiply and finally die out altogether. Messrs. F. Cook and A. A. Osman have a preliminary report on the acidosis factor in pregnancy and in nephritis. The etiology and treatment of varicose veins are discussed by Mr. Philip Turner. An attractive feature of this number is the obituary notice of the late Sir Frederick Taylor by his colleague, Sir Charters Symonds, who, with sympathetic touches, shows the enormous debt that the medical school owes to its first Dean's work for fourteen years, and brings out his wide activities in other directions. His textbook on medicine held a prominent position for close on thirty years, and passed through eleven editions in his hands, thus surpassing the corresponding works of Bristowe, F. Roberts, and Osler.

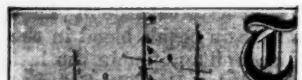
NOTES ON BOOKS.

THE *Textbook for Fever Nurses*[7] by Dr. GRACE H. GIFFEN DUNDAS follows the syllabus of lectures drawn up by the Fever Nurses' Association; it is divided into three parts, the first dealing with anatomy and physiology, the second with the various fevers and fever nursing, and the third with practical instruction and ward work. In an elementary work of this kind illustrations are essential, and their absence in this book considerably detracts from its value. Two of the chapters are merely arid enumerations of the various bones, muscles, and viscera. The description of the various diseases is on the whole clear and accurate though somewhat fragmentary, but must be supplemented by lectures or larger textbooks. In view of the uncertain etiology of scarlet fever, small-pox, measles, rubella, and mumps the writer is too dogmatic in stating that each of these diseases is caused by an organism (vide pp. 93, 127, 134, 138, 140). An index should be added to the next edition.

[6] *Guy's Hospital Reports.* Edited by Arthur F. Hurst, M.D. Vol. lxxiii, No. 2. April, 1923, issued quarterly. London: Henry Frowde, and Hodder and Stoughton. 1923. (Roy. 8vo, pp. 117-245; 1 plate, 21 figures. Subscription: Two guineas post free for volume of 4 numbers; single numbers, 12s. 6d. net.)

[7] *Textbook for Fever Nurses.* By Grace H. Giffen Dundas, F.R.C.S.I., D.P.H.Camb. Edinburgh: William Bryce. 1923. (Fcap 8vo, pp. xii + 202. 4s. 6d.)

NINETY-FIRST ANNUAL MEETING
of the
British Medical Association,
PORTSMOUTH, 1923.



H.M.S. *Victory* at her old moorings.

THE ninety-first Annual Meeting of the British Medical Association will be held next month in the historic town of Portsmouth. On the afternoon of Tuesday, July 24th, Mr. C. P. Childe, F.R.C.S., senior surgeon to the Royal Portsmouth Hospital, will be inducted President in succession to Sir William Macewen. Mr. Childe will deliver his presidential address on the evening of the same day. The meetings of the Sections will begin on the next morning and will be continued on the two following days. The programme of the varied work they will do is published in the SUPPLEMENT to this issue. It will be observed that a Pathological Museum is being formed, to which members are asked to contribute specimens, and also that there will be an Exhibition of Surgical Appliances, Foods, Drugs, and Books.

The Annual Representative Meeting will begin on Friday, July 20th; after formal business it will deal first with the Annual Report of Council, which relates the work done by the Council and Committees of the Association during the past year. On this occasion arrangements have been made which will enable Representatives to make the journey from London to Portsmouth and the return journey also by car. The cars will start from London on Wednesday, July 18th; the route taken will differ on the outward and backward journey, but on both much interesting and picturesque country will be traversed.

Portsmouth, and Southsea its suburb on the east, are one town—Portsmouth being the business centre and the chief base of the Royal Navy, and Southsea a pleasant residential quarter with all the amenities of a seaside watering place.

SOUTHSEA, PORTSMOUTH.*

The Borough of Portsmouth embraces the whole of the Isle of Portsea and a portion of the southern slope of Portsdown, including Cosham. The island is connected to the mainland by one road only over Portsbridge, and by the railway, which crosses the creek a little to the east of the road. The creek joins Langstone Harbour on the east with Portsmouth Harbour on the west at the apical part of the Isle of Portsea, which is roughly triangular in shape. The base or southern border faces the Isle of Wight, from which it is separated by a channel of the sea, called the Solent. The most important portions of the borough on the island are known respectively as Portsmouth, Portsea, Southsea, Landport, Buckland, Fratton, Kingston, Copnor, Eastney, and Hilsea.

Portsmouth Town Station is centrally situated in Commercial Road, opposite the General Post Office. Close to the station on the south side of the railway is the Town Hall and the Municipal College. In the latter building the Reception Room will be provided, as well as the rooms for all the Section Meetings, and the quarters for the meetings of the Representative Body. Behind the College and to the north of the railway is Victoria Park, which can be entered by a gate on the north side of the Town Hall between the War Memorial and the railway. A five minutes' walk across the park brings us to the Naval Barracks, where, in the Gymnasium, will be housed the annual exhibition of surgical appliances, foods, drugs, and books.

Most of the motorists coming to the town will travel along the London Road, or part of it, and so enter the town by the same route that Nicholas Nickleby tramped. They will come through Landport, passing the Halfway House, and so along Commercial Road, with its strange mixture of old and modern houses and shops, and on the way will pass No. 393—the house in which Charles Dickens was born. The motorist will not be able to enter the old town of Portsmouth through the Landport or Town Gate, as described in *Nicholas Nickleby*, as the road has been diverted; from Commercial Road the journey will follow a newer road, past the terraces, which leads directly to the Common and sea front.

The Common and front and the view of the Isle of Wight across the silvery Solent are the charm and attraction of Southsea—a great asset of which the inhabitants are justly proud. The Common is a large open space between the houses and the beach, and is about a mile and a half long. On State occasions it is the site of brilliant military displays. Between the numerous paths that intersect it will be found on many days hundreds of the young men of the borough enjoying games of cricket or football. When standing on the open common in the exhilarating air we have on the west a lovely view of Portsmouth, with its old church tower overtopping the elm trees that hide the Garrison Church; the remnants of the old town fortifications; and, facing the Victoria Barracks, the nicely laid out Pembroke Gardens, open for tennis and croquet.

Here, too, at the west end of the Common is the Clarence Pier, and the Esplanade affords a continuous promenade extending eastwards to Southsea Castle; passing in front of the Castle it continues to Southsea Pier and onwards past Lump's Fort and Eastney Barracks to the Coastguard station—a distance of over three miles. Running parallel with the promenade is a good carriage drive.

Along the front are many memorials, the most important being the anchor of the old *Victory*. It used to stand on the other side of the Clarence Pier and then marked as nearly as can be the spot from which Nelson started on his last memorable voyage. The part of the front between the Clarence Pier and Southsea Castle is always somewhat busy and crowded in summer. In front of the Castle some quiet seats may be found and a good view enjoyed of Spithead, the great anchoring place for the fleets and the scene of the naval reviews. All sorts of craft can be watched passing up and down the Solent—big liners and dreadnoughts, little fussy torpedo boats and racing yachts, all add their share to an ever-changing panorama. Three strange circular structures painted in chessboard pattern rise from the water; they are ironclad forts erected by Lord Palmerston to defend the harbour and dockyard. That nearest Portsmouth is built on the Spit Bank, the next further off on No Man's Land, and the furthest off on the Horse Shoe Bank. The lightship nearest to us is the *Warner*, and beyond can just

* Previous articles on Portsmouth and its neighbourhood appeared in the BRITISH MEDICAL JOURNAL of December 9th, 1922, p. 1137; January 13th, 1923, p. 77; February 10th, 1923, p. 253.

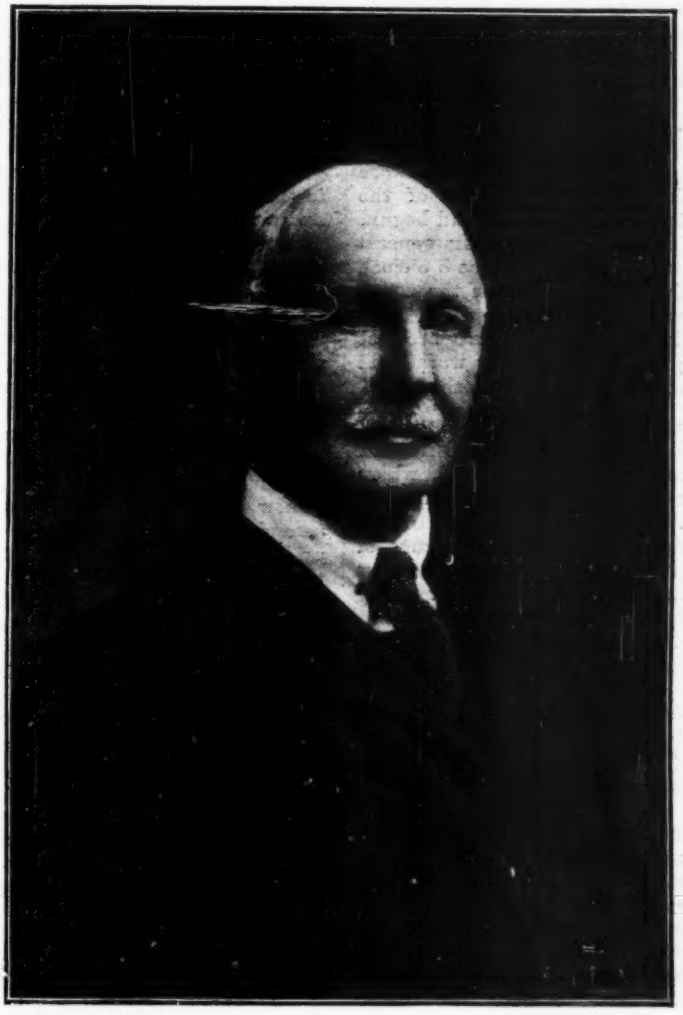
be made out one of the mystery towers, placed in this position since the end of the great war.

The Common has recently been bought by the Corporation from the War Office and on completion of the purchase schemes will be prepared for adding to its attractions and utility. Continuing our promenade eastwards from Southsea Castle, we come to another busy part of the beach, and Southsea Pier. This pier is the property of the Corporation and was opened in 1908 to replace one that was burnt down. From this pier, as well as from the Clarence Pier, boats run to the Isle of Wight, and during the season many other sea excursions can be enjoyed. Military bands can be heard on both piers, and other musical and variety entertainments are freely provided. Around the pier we shall find the beach busy, with plenty of sea bathing and boating in progress. Close by the pier is the Canoe Lake Garden, where there are plenty of tennis courts, croquet lawns, and greens for bowls. On the lake are some canoes and swan-like boats for the use of little people; the real live swans were a gift from the late King Edward VII. The sailing of model yachts on the lake is vigorously practised, and is a sport rapidly growing in favour.

Just beyond Lump's Fort—now practically dismantled—is the Corporation miniature golf links. The large brick buildings a little further on are the Eastney Barracks, the home of the Royal Marine Artillery—more familiarly known as the Blue Marines. Passing in front of the barracks we come upon the only stretch of sandy beach the Borough possesses. The promenade stops at the coastguard outlook. The road turns inland and continues to Hayling Ferry, but our walk can be continued along the edge of the sea wall to Fort Cumberland and so round to the ferry, which crosses the outlet of Langstone Harbour and takes us to Hayling Island. The island is noted for its golf links, and here the match for the Ulster Cup will be played.

Southsea streets are somewhat tortuous and confusing. Palmerstone Road, which runs north from Southsea Castle, is the shopping centre. To the west of this road will be found Osborne Road, which is a business thoroughfare leading back to the Common and old Portsmouth. In it, overlooking the Common, will be found the "official hotel"—the Queen's. At the land end of Palmerstone Road by St. Jude's Church is Kent Road, running in the same direction as Osborne Road. It is a residential road, and off it will be found "Dovercourt," a club house kindly placed at the service of the lady members during the meeting of the Association. Grove Road is a continuation of Palmerstone Road and is quite rural, but Elm Grove, to which it leads, has forfeited its title to that designation. It was once the most picturesque road in the Borough, but now the elm trees and rooks are gone and the gardens in front of the old houses covered with shops. Sir Arthur Conan Doyle once lived in this road, and here, whilst in general practice, wrote *Under the Red Lamp*. The continuation of Elm Grove is King's Road, a good shopping centre, and this leads us to the Terraces. Turning to the left and following the Terraces we shall come back to the Common and the sea; turning to the right we shall soon be in Commercial Road, now the chief business quarter of Portsmouth. Continuing straight on from King's Road we shall soon find ourselves at the top of High Street—once the most important of thoroughfares—and from it we can explore the old fortified town. The old fortifications were removed in 1876, and the two recreation grounds formed and levelled.

At the top of High Street on the left we shall see the house in which Buckingham was assassinated by Felton. Behind this house, on ground now occupied by the Cambridge Barracks, is the site of the old theatre, the scene of Mr. Crummles's successes. On the opposite side is the old Unitarian chapel, which has in its burial ground a monument to John Pounds, the founder of ragged schools. Again, further down on the left, is the George Hotel, where Nelson rested just before he embarked on his last commission which culminated in the glorious victory of Trafalgar. Next the Old Guild Hall claims attention. It is now converted into a museum, which contains some interesting relics of old Portsmouth. Continuing our perambulation round the bend we pass the site of the Old Blue Posts and come to Point, where we can visit the Old Star and Garter and take ferry or floating bridge across the harbour mouth to Gosport, and so visit the great naval hospital at Haslar. A trip round the harbour in a motor launch will be both interesting and instructive, and if time and tide permit the trip may be extended so as to visit the old castle and church at Porchester.



Photograph by] [Elliott and Fry.

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From old Portsmouth we can take our way to ancient Portsea and the Royal Dockyard. In the yard we shall find the latest in steel armoured ships and relics of the old "wooden walls," the glory of the navy in the past; also in dry dock, undergoing internal structural repair, Nelson's old flagship the *Victory*.

The Portsmouth Corporation owns a fairly good service of electric trams that will be found useful for getting about in the town and its immediate neighbourhood. The Corporation electricity supply is one of the first started in England and was incorporated under the guidance of Principal Garnett. The water supply of the borough is very good; the water company obtains its supply from springs at Bedhampton, a few miles out.

For residents and visitors land excursions and sea trips are both numerous and varied. It is hoped to arrange visits for members attending the Annual Meeting to Southampton and the New Forest, Ventnor, Midhurst, Alton, Winchester, Salisbury, Brighton, Bournemouth, Farnham and Hindhead. Each possesses its own particular charm and attraction, and further to dilate on their respective merits would at the present be superfluous.

THE SURGICAL CLINICS OF SWITZERLAND.

BY

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THERE is no better stimulus for a surgeon than to see how others meet the problems of his art, so when a short time ago I was invited by Professor Gask to join a small party of surgeons in a visit to the surgical clinics of Switzerland I gladly accepted. The party consisted of the directors of the surgical units at St. Bartholomew's, University College, St. Mary's, and the London hospitals (Messrs. Gask, Choyce, Pannett, and Souttar), and Messrs. Girling Ball, Gordon-Taylor, Kenneth Martin, and Morland. We left London on February 28th, and were exactly ten days in Switzerland. During that time we visited Basle, Zürich, Berne, and Lausanne. We spent every available moment in the hospitals and laboratories of these places and in attending lectures and demonstrations given to the students.

I believe it was the first occasion on which a party of English surgeons had visited the Swiss clinics. Nothing could have been more cordial than our reception; we were given every facility for seeing the regular work of the hospitals, and where, as in Zürich, the vacation had begun, special demonstrations were arranged for us. In general we began the day with a lecture demonstration at 8 o'clock and only finished in the wards at a late hour in the afternoon. We saw much that was new and interesting. We believe that the ideas and information we have brought back with us will be of the greatest use in our work, and we hope that they may be of some interest to others.

Basle.

We arrived at Basle at 7.20 a.m. on Thursday, March 1st, and after breakfast made our way to the hospital, where we met Professor Hotz. He received us most cordially, and we found ourselves seated in the front row of his class of fifty students. The professor is a slight, alert man of medium height, 45 years of age, with a quiet incisive manner which rivets attention, whilst his unfailing sympathy with both his patients and his students marked a most attractive personality. After a few words of greeting to his visitors he proceeded with his regular morning demonstration.

A number of simple surgical cases followed one another into the theatre—a child with a dentigerous cyst, a woman with a sarcoma of the upper jaw, a child with an empyema which had discharged through a bronchus. Three students were called down to examine the cases, and the lecturer directed most of his questions and remarks to them. In the background were four assistants, in addition to the sister and the theatre attendant. For each case there had been provided every possible accessory in the way of photographs, radiographs and specimens, whilst the blackboard and epidiascope were in constant use. An hour later the students retired and the lecture room became an operating theatre. We saw two colloid goitres removed under local anaesthesia, with exquisite technique, practically no bleeding, and no pain. Several operations for appendicitis followed, but in these open ether was given by a nurse.

In the afternoon we visited the wards, where 150 beds are under the direct control of Professor Hotz. The cases were grouped according to diseases in small wards containing from three to ten beds—a most convenient arrangement, as thyroids and gastric cases, for example, could be studied and treated as separate groups. The surgical section included a full range of laboratories, *x*-ray and electrotherapeutic departments, as well as an out-patient department, all under the absolute control of the professor.

In the evening Professor Staelin, the head of the medical section, gave us an admirable demonstration on the treatment of chronic empyema in adults. It was illustrated by superb radiographs and charts, and a whole series of cases was provided for our inspection. It was a fine example of the class of work which can be produced with the help of a group of highly trained assistants, and it was an object lesson in the close co-operation which exists between the medical and surgical sections.

Next day we made an early start with a lecture at 8 a.m., and when I say that in the course of the day we fitted in five clinical demonstrations, watched two surgeons in their operating theatres, and visited the new Institute of Anatomy, I think it will be agreed that we did not waste our time. We were left with the impression of demonstrations superbly staged, of a great wealth of clinical material organized as is only possible when it is under the control of one head, and of apparatus and accommodation provided for teaching without any regard as to its cost.

For sheer technical perfection it would be impossible to surpass the demonstration given by Professor Hotz to a group of students just entering upon their surgical training. A case of tuberculous spondylitis with severe deformity was shown, and the results of such a deformity discussed from the point of view of anatomy and physiology in terms readily understood by his audience from their knowledge of these subjects alone. The demonstration was illustrated by superb specimens, both dry and bottled, and by diagrams, whilst cases of lumbar abscess and of paraplegia were brought in to illustrate complications. The preparation of such a demonstration must have involved a large amount of work both for the professor and his assistants, but it gave to the students a clear view of surgery as a reasoned science and a high standard for their own clinical study.

In the afternoon we visited the new Anatomical Institute recently erected and equipped by the Canton of Basle at a cost of £100,000. I have seen in England no school for the teaching of any subject that could in any way compare with it. An open position and fine architecture form a prelude to spacious dissecting rooms, research laboratories equipped with every modern appliance, and a lecture theatre which did everything but speak. As teachers ourselves under somewhat different conditions, we found it difficult to imagine what teaching must be like when the pressure of one button brings up a fresh blackboard or a new drawing, and another excludes daylight in a few seconds, where every possible dissection is ready to hand, and where one's voice is never drowned by the roar of traffic.

Near by we saw the foundations of the new maternity wing of the gynaecological clinic. It is to cost £200,000 and when completed will accommodate two-thirds of the women of Basle in confinement. What may not the future of Switzerland be when a small canton is prepared to provide such resources for the health of its children and the training of its medical men?

On Saturday we were privileged to witness a very remarkable demonstration. It is the custom on Saturday morning for the whole medical staff to meet in the lecture theatre of the pathological department. We found all the material from the operations and *post-mortem* examinations of the week neatly arranged on trays. Professor Roessle gave a rapid description of each case, occasionally referring to one of his audience for some clinical detail about his case.

Such a review by the medical and surgical staffs of their week's work must be a wonderful stimulus to efficiency. It supplied us with considerable food for reflection.

Zürich.

The head of the surgical clinic at Zürich is Professor Clairmont, a pupil of von Eiselsberg of Vienna. He is a man of 47, of dominating personality, and a fine exponent of the minute technique of the Vienna school. We met him in his operating theatre at 8 a.m. on Monday, March 5th, and saw a varied series of operations including Lerich's operation on the brachial artery for Raynaud's disease in a woman of 38, a thyroidectomy under paravertebral anaesthesia, a laminectomy under local anaesthesia, a nephrectomy for tuberculosis, and a cholecystectomy. Each operation was carried out with the most elaborate ritual and extreme minuteness of detail, occupying a very long time in abdominal work. The professor was surrounded by a large number of highly trained assistants, one or other of whom, as a rule, completed the final stages of the operation.

In the afternoon we were shown round the hospital. The patients were grouped in small wards, containing from four to ten beds, largely in accordance with disease. The

most elaborate care was taken in the examination of the cases and in the keeping of records. We saw special rooms equipped for basal metabolism, for continuous bath treatment, and for the making of plaster casts. In one room we were shown a most remarkable collection of models of diseased conditions—for example, carcinomatous ulcers of the breast and face, chronic ulcers of the stomach, and deformities. The specimens were so perfect as to be almost indistinguishable from the original conditions. They were made of wax by an artist who is retained entirely for this purpose, and who uses a process of his own invention. In addition, two artists devote the whole of their time to the drawings of specimens and cases. We saw superb records—photographic, water-colour, and pencil. A small library, well equipped with modern literature and journals, is provided solely for the use of the assistants.

The *x*-ray department entirely eclipsed anything we had ever seen. For diagnosis there was a large department with many sets of apparatus, all of the most modern type. The rapidity with which extensive examinations could be carried out was very remarkable, the actual time occupied in discovering, examining, and photographing a duodenal ulcer being less than four minutes. It is true that we obtain equally good photographs, but at the cost of enormously greater labour to the staff. The apparatus for treatment was installed nine months ago by Siemens and Halske. It is entirely in duplicate, and so enclosed that injury to the operator is impossible. The transformer has an output of 500,000 volts and is placed in a room beneath. By means of an ionic quantimeter the dosage at any depth in the tissues can be measured with mathematical accuracy. To compare it with any ordinary apparatus is to compare the latest Rolls-Royce with the cars that made the first journey to Brighton.

Berne.

Professor de Quervain is a short, thick-set man of 50. He came from Basle to Berne in 1918, following Kocher, who had raised the surgical clinic of Berne to the premier position in Switzerland. Nothing could be greater than the contrast between Berne and the clinics we had just seen. The neat dexterity of Hotz, the irresistible driving force of Clairmont, were replaced by a slow technique and an entire absence of any regard for external appearances. But though the technique looked slow the operations did not occupy an excessive time and the condition of the patients next day was extraordinarily good. We saw two operations for goitre, one for appendicitis, and a resection of the stomach for carcinoma in a man of 59. In each case local anaesthesia was employed, assisted in the stomach case by splanchnic anaesthesia, and in the end by a general anaesthetic.

The Berne clinic differs from the others in that it only controls 100 of the surgical beds of the hospital (600 beds in all). Drs. Arnt and Wildbolz were in charge of the other surgical beds, and were evidently regarded by Professor de Quervain as equal colleagues. To the clinic are attached its own laboratories for clinical and pathological examinations, *x*-rays and microphotography, a large amount of the routine work being carried out by a sister. As might be expected in the home of thyroid surgery, great stress is laid on the investigation of basal metabolism, and a room was set aside for this purpose. The professor also told us of a series of experiments he is conducting on the effect of thyroid secretion on rats. They are placed under a bell jar and the air aspirated. The normal rat vomits when the pressure reaches 300 mm. of mercury. Rats fed on thyroid, or the blood of patients with exophthalmic goitre, react at 500 mm.; but rats given blood from cretins reach a pressure as low as 250 mm. before reaction occurs. The method is being used practically for testing the strength of thyroid preparations.

De Quervain left upon us the impression of a powerful brain devoted not so much to the technique of surgery as to its larger problems; the problem which at present absorbs him is endemic goitre and the cretinism which accompanies it. The Swiss goitres are of the colloid type; adenomata are uncommon, and Graves's disease is very rare. The contrast with English cases is very remarkable, since with us enlargement of the thyroid is so frequently accompanied by excess of secretion, whilst in Switzerland the reverse is the case. An interesting attempt to control the disease is the addition to commercial salt of a small proportion of potassium iodide. In this form, or in chocolate tablets, iodine prophylaxis is now being tried in Switzerland on a large scale amongst the school children.

To spend a day in Berne is to realize how grave is the problem for the Swiss nation. A large proportion of the women seen in the street and many of the men have goitres. The two porters who carried our bags to the station were half cretins. A large proportion of the population is of the slow, phlegmatic, hypothyroid type, and big institutions have to be provided for cretins and mongols, unable to care for themselves. Yet even this has its compensations, for, as de Quervain pointed out to us, the Swiss were too phlegmatic to worry about the war. A thyroid secretion has apparently proved an expensive luxury to the other nations of Europe.

Lausanne.

We met Professor Roux in his lecture theatre at 8 a.m. on Friday, March 9th. He is a man of 66, with curly white hair and gleaming eyes. His energy is amazing, and from the minute when he began to lecture at 8 o'clock till he finished operating at 1.30 p.m. he never ceased to talk or to be the driving power of the whole clinic.

He starts every morning with a lecture demonstration at 8 o'clock (in summer it is sometimes 6), at which every student must be present. Cases followed one another into the lecture room to be demonstrated by Roux with a wealth of reminiscence and an incisive and apposite wit which I have rarely heard equalled. Two students were called down to examine each case, and for a nervous beginner it must have been a somewhat terrifying experience. We ourselves shared the students' anxiety, for more than once the professor turned to us and asked us in rapid French the views we held in England on some subject. Fortunately he did not press his questions too far, or I am afraid our French, at least, would have been unequal to the occasion. Always courteous, never disturbed by any mischance, we realized that in him there lived a great personality, stimulating all with whom he came into contact, adored by his colleagues and students, and almost worshipped in Lausanne.

The last case was that of a woman in bed with a large pelvic tumour. Having discussed for half an hour every possible diagnosis, Roux wakened up the woman, who had fallen asleep, and asked if she would mind if he made a little incision to see what the tumour really was. As she raised no objection an anaesthetist was called in, the lecture room was rapidly converted into an operating theatre and the patient transferred to a table. A generous incision revealed an enormous mass of carcinoma, apparently arising from the right ovary, and certainly involving everything in the neighbourhood. Nothing daunted, the professor proceeded to separate it from its surroundings with amazing speed and dexterity. He was soon standing ankle deep in swabs and débris, for everything found its way to the floor, but the tumour came out with very little damage to the patient, who was swept away into an adjoining room to have her abdomen closed by an assistant. The floor was swept up with a large besom, and in a breathless stream cases followed one another through the theatre, amongst which I at least noted two goitres, two appendix cases, and a very extensive gastrectomy. When half-past one arrived we were all in a state of collapse, but the professor seemed as fresh as ever. For five and a half hours he had never ceased for one minute to talk and to demonstrate.

Several motors were waiting for us at the doors of the hospital, and we were driven off by Professor Roux to a magnificent lunch. It was my fortune to sit beside the professor, and though he now looked old and tired, he continued to pour out reminiscences, whilst I gathered together all the French I could muster to stimulate him. He spoke of the difficulties of his early boyhood, and of the life of a poor Swiss peasant. He reminded us how Swiss chalets are all built on the side of a hill to face the south, and he told me that it is the custom for the father and mother to live and work in the sunny front room, whilst

the children live as best they can in the cold, dark, airless room facing the hill behind. But, said he, on a cold night they could always sleep with the cows, and many a night he had gone to sleep nestling against his father's cattle.

It seemed to me the finishing touch to a great personality. When the surgeons of to-day were boys at school Roux was one of the giants of surgery—a man whose name will live beside those of Lister and Paget, who to-day is the idol of his country, and yet could speak naturally and simply of his humble boyhood as a happy reminiscence. Professor Roux is a prince among surgeons, but it is not only as a surgeon that he will live in my memory.

Some Impressions.

From our short visit we gathered certain impressions which it may be well to summarize.

1. *Teaching.*

In all the clinics we visited the teaching of the students centred entirely round organized demonstrations in the lecture theatre. In this respect it differs fundamentally from the methods we adopt in this country. In bedside teaching given to small groups of students by individual members of the staff, our students have an opportunity to which the Continental system affords no parallel. We, on the other hand, can give our students nothing comparable to the demonstrations we have seen abroad. We were all agreed as to the value of such demonstrations, prepared by highly trained assistants and perfectly staged with all the resources of the modern lecture theatre. As a stimulus and as a standard, both for the student and the teacher, they are of real value, and in my opinion no educational system can be considered satisfactory in which they do not take a prominent place.

2. *The Staff.*

At each clinic the professor held a unique position, his assistants being essentially subordinates. Such a system lends itself to a co-ordination impossible for ourselves. On the other hand, the system depends for its success absolutely upon the personality of one man, whilst it greatly limits the opportunities and destroys the initiative of everyone else. If each of our firms had attached to it a paid assistant we should in a large measure obtain the advantages we saw of help for the teachers and training for the younger men without the disadvantages of centralization. The head of each clinic was given full opportunities for private practice. In Basle a private section was run by the hospital for the professor, definitely as a recompense for his services. In Zürich he was accommodated in a fine institution controlled by the Red Cross Society.

3. *The Hospitals.*

The hospitals belong to the town or canton. So far as we could gather they do not depend on voluntary support. A charge of about 6 francs (5s.) a day is made for each patient, but the whole or greater part is defrayed by a national insurance, to which the whole of the working classes contribute. The fees of the students are for the most part paid from national sources, and the cantons and towns vote large sums for new buildings and equipment, both clinical and educational.

Every hospital we visited was equipped with first-class operating theatres, and with clinical theatres (usually many) far superior to anything of the kind we had ever seen. I have seen nothing in England to compare with the anatomical department just opened, or with the maternity department in course of erection at Basle.

It is most improbable that at the present day such equipment can be provided in England from private sources, and it was our unanimous opinion that our only hope of raising the equipment of our training schools to the level of Switzerland lies in the support of our hospitals by the State. The Swiss have recognized the health of their nation and the care of their sick as primary national duties, not to be left to the vagaries of private enterprise. And they have realized that a highly trained medical service is as valuable an asset as a nation can possess. I hope that we may soon be given an inspired glimpse into the obvious, and follow their example.

THE SPAHLINGER TREATMENT.

We published three weeks ago (May 12th, p. 830) an article giving a general review of the position with regard to the method of the treatment of tuberculosis at which M. Henri Spahlinger has been at work for the last ten or twelve years. Reference was there made to the complete and partial serums and the complete and partial vaccines that M. Spahlinger had produced and had placed at the disposal of certain physicians, although material has not been made generally available.

It will be of interest to give some further particulars about the various products which, as has already been implied, can be classified under two headings, namely: (1) vaccines; (2) anti-serums. A great majority of the cases of tuberculosis treated are given vaccines. Serum is only used in rapidly progressive cases, or in special emergencies.

The Vaccines.

These products are essentially similar to the tuberculins, the use of which from time to time has been advocated. M. Spahlinger has modified and elaborated the methods for the preparation of tuberculin or vaccine, and claims to have obtained products which are more effective than other preparations. Tubercle bacilli are treated by various processes and four vaccines are made. The complete course of vaccine treatment consists of successive courses of injections of each of these four vaccines.

Preparation of the Serum.

What is called the complete anti-serum is made by mixing a large number of (partial) anti-serums, each obtained from a horse which has been subjected to some particular course of injections. The serum of each horse which is added to the mixture is called a partial anti-serum. The partial anti-serums are of different kinds; some are obtained by injecting tubercle bacilli or products of tubercle bacilli into horses, some by injecting other varieties of bacteria which are found associated with the tubercle bacilli in cases of mixed infections. The former group is further divided into bacteriolytic serums and antitoxic serums. The antitoxic serums are prepared by injecting products which are called toxins. These products are obtained from tubercle bacilli by somewhat elaborate methods.

The methods imply nothing new in principle and are essentially those which have been tried sometimes with and sometimes without success in other bacterial diseases.

It is sought (1) to produce active immunity against the tubercle bacillus and its toxins in the patient by the injection of a vaccine, and (2) to make an anti-serum which has antitoxic and bacteriolytic properties and to use this anti-serum to confer passive immunity on a human being.

These are the general principles which have inspired every worker from the times of Pasteur and Behring. The only novelties relate to the technical details and exact methods of preparation of the substances which make up the vaccine and of the various products which are used to inoculate the horses. The exact methods employed are secrets; at any rate the full details which would be needed by anybody who wished to work at the method have not been published. As regards the vaccine, an attempt is made to produce an active immunity by the injection of a series of substances obtained from tubercle bacilli. We do not know of any published experimental data which show that animals inoculated with these vaccines develop immunity against the tubercle bacillus. There remains the evidence to be derived from clinical observations on cases treated with these vaccines. On this point it is not yet possible to form an opinion; it is notoriously difficult to obtain satisfactory evidence unless a very large number of cases are treated and observed under strict experimental conditions, which are difficult to maintain in the ordinary course of medical work.

Effects of the Anti-serums.

It is claimed that the mixture of serums, which is called complete serum, contains both bacteriolytic and antitoxic serums. Antitoxic serums are prepared by injecting horses with preparations which are called ecto-toxins and endo-toxins. We have not seen any published experiments which

show, or attempt to show, that these substances are toxins in the sense in which bacteriologists use the word "toxin." In the case of diphtheria bacilli and the tetanus bacilli, as everybody knows, it is possible to prepare a bacteria-free toxin which when injected into animals produces the characteristic features of the disease in question. Nobody has ever succeeded in making a potent ecto-toxin from tubercle bacilli, and M. Spahlinger has not published any experiments which would support the claim that he has been more successful than other workers. The serums which he calls antitoxins are so called because they are obtained from horses which have been injected with substances which he calls toxins. We do not know of any published work which shows that these serums contained antitoxins, and as there is no evidence that M. Spahlinger has ever prepared an extracellular toxin, in the ordinary sense of the word, from the tubercle bacilli, it is difficult to say how such evidence can be forthcoming. The claim for the antitoxic properties of the serum is based on the fact that cases of rapidly advancing caseous tuberculosis have been arrested by the use of the serum. As to the value of such clinical evidence it is not possible, from the material so far published, to express any opinion. It is common knowledge that many cases of acute caseous tuberculosis do survive the acute stage and reach a chronic stage, when the patients are able to resume a more or less normal life. The cases of pulmonary tuberculosis showing the signs of large dry cavities, which may be seen in any out-patient department, are sufficient evidence of this.

It is, of course, possible that the elaborate and complicated methods which M. Spahlinger employs may possess advantages, but there is no laboratory evidence that they are any better than what has been done before, and the only evidence there is rests on the observations of some clinical observers who have been favourably impressed by the results which they are obtaining.

THE DANGEROUS DRUGS AND POISONS (AMENDMENT) ACT, 1923.

STATEMENT BY THE HOME OFFICE.

WE have received from the Home Office the following statement, dated May 28th, 1923:

The Secretary of State desires to draw attention to the provisions of the above Act, which received the Royal assent on the 17th instant and came into force at once. This Act amends and amplifies the Dangerous Drugs Act, 1920, and amends Section 17 of the Pharmacy Act, 1868; but it should be noted that it does not vary the drugs to which the Dangerous Drugs Act, 1920, applies, and does not in any way alter the Raw Opium Regulations or the Dangerous Drugs Regulations which are now in force. The effect of its provisions may be summarized as follows:

Section 1 gives increased powers of search. It empowers a Justice of the Peace to grant a warrant to search any premises and any persons found on the premises, in any case where he is satisfied that there is reasonable ground for suspecting that drugs are being kept illicitly, or that a transaction in drugs which will be contrary to the Dangerous Drugs Acts or the "corresponding law" in a foreign country ("corresponding law" is defined in Section 6) is being carried out or is in contemplation and that documents relating to the transaction are to be found on the premises; and the constable who makes the search may, on reasonable suspicion of any offence, seize any drugs found or any documents relating to a transaction of the character referred to. It also makes it clear that the existing powers of inspection in Section 10 of the Act of 1920 cover documents as well as books.

Section 2, Subsection (1), substitutes two new subsections (1) and (2) of Section 13 of the Act of 1920. The first re-enacts the existing Subsection (1), with the addition of two new offences, viz. (1) the making or using of false statements with a view to obtaining a licence or other authority under the Act, and (2) the aiding, abetting, procuring, etc., of the commission outside Great Britain of any offence against the "corresponding law" (see Section 6) of that country, or the doing of any act preparatory to or in furtherance of any act which if committed here would be an offence against the Dangerous Drugs Act. Under the second of these provisions, it should now be possible to deal effectively with persons in this country who organize the smuggling of drugs from the Continent to the Far East, the United States of America, and other countries, but do not themselves handle any of the drugs in this country. It will be noted that the powers of search given by Section 1 extend to such cases.

New Subsection (2) increases the penalties under the old Act. It enables proceedings to be taken on indictment by or with the consent of the Attorney-General or by the Director of Public Prosecutions, in which case the penalty may be as much as a fine of £1,000 or 10 years' penal servitude, or both, and substitutes for the graduated penalties fixed by the Act of 1920 for first and subsequent offences on summary conviction a uniform maximum penalty of £250 or 12 months' imprisonment, or both. An exception is made for offences committed through inadvertence in connexion with the keeping of records or the giving or dispensing of prescriptions if not connected with any offence or intended offence against the Acts. In these cases the maximum penalty is a fine of £50. Persons attempting to commit, or soliciting or inciting another person to commit, an offence are made liable to the same penalties; and directors and officers of companies are made personally liable for offences committed by their companies, unless they can prove that the offence was committed without their knowledge or consent.

Subsection (3) of Section 2 makes clear two points about which doubt had been felt: (*a*) that in a prosecution under the Act it rests with the defendant to prove that he had a licence or other authority to do what he is charged with doing, and that the onus is not on the prosecutor to prove that he had no licence or authority; (*b*) that a term of imprisonment for non-payment of a fine imposed in addition to a penalty of imprisonment may be ordered to commence *after* the expiration of the sentence of imprisonment. Sections 3 and 4 are amendments of Section 17 of the Pharmacy Acts.

Section 3 relates to the sale of poisons to registered medical practitioners, registered dentists, and registered veterinary surgeons. Under that Section purchasers of poisons included in Part I of the Schedule of the Poisons and Pharmacy Act, 1908, are required to sign the poison book. This provision had been very much neglected in the case of sales to doctors, and after consultation with the British Medical Association and the Pharmaceutical Society an alternative procedure has been laid down in the Section. This procedure is as follows:

(*a*) The doctor, etc., must furnish a signed order, bearing his name and address, and stating the nature and amount of the poison required.

(*b*) The chemist must be reasonably satisfied that the signature is genuine, and is that of a duly qualified doctor, etc.

(*c*) The poison, if sent by post, must be sent by registered post.

(*d*) The chemist must himself make an entry in the poison book, and must keep the original signed order for at least two years.

Special provision is also made for the supply of a poison to a doctor in an emergency.

This procedure will apply to sales to registered doctors, dentists, or veterinary surgeons of the dangerous drugs; and either this or the signature of the poisons book should be required to be observed. It should be noted that the provisions of Section 17 of the Act of 1868, and of Section 3 of this Act, apply equally to sales by wholesale dealers to doctors, dentists, and veterinary surgeons.

Section 4, Subsection (1), dispenses with the entry by a chemist in his prescription book of the particulars of medicines containing poisons dispensed by him as medical prescriptions issued under the National Health Insurance Acts, as these prescriptions are preserved by the Insurance Authorities, and are available for examination if required by the authorities. Subsection (2) strengthens the provisions of the law with regard to the labelling of poisons. The label must in future state the name of the poison (not merely, as previously, the name of the article, which might give no indication of the nature of the poison it contained), and, where the poison is only one of the ingredients, the proportion it bears to the other ingredients. An Order-in-Council will be issued describing the particulars to be given as to the proportion.

Section 5 gives statutory sanction to the existing practice in calculating the percentage of a solid ingredient in a liquid preparation. It is the method used in the *British Pharmacopoeia*.

DR. KLEIWEG DE ZWAAR, professor at the University of Amsterdam, has instituted a triennial prize of the value of 2,500 francs, which will be awarded for the first time in 1924 for the best work in physical or prehistoric anthropology during the preceding three years. Candidates should apply before November 1st, 1923, to the Secretary, École d'Anthropologie, 15, Rue de l'Ecole de Médecine, Paris.

British Medical Journal.

SATURDAY, JUNE 2ND, 1923.

THE BRITISH MEDICAL ASSOCIATION.

THE British Medical Association, various and mutable, takes for its province all that concerns the medical profession—science, clinical medicine, public health, and material interests. The vast majority of its members are, in the nature of things, general practitioners, but from its earliest small beginnings in 1832 it has gone on the principle that, representing the profession as a whole, it was under an obligation to contribute to the advance of medicine. In the Memorandum of Association its objects are defined; we read there that the Association was established to promote the medical and allied sciences, to maintain the honour and interests of the medical profession, to circulate such information as may be thought desirable by means of a periodical journal, and to grant sums of money for the promotion of the medical and allied sciences. Another object is to hold periodical meetings of the members of the Association, and this has been fulfilled through the meetings of Branches and Divisions, and through Annual Meetings, which have been held without any intermission save that caused by the great war.

The Annual Meeting this year is to be held in Portsmouth, under the presidency of Mr. C. P. Childe, F.R.C.S., senior surgeon to the Royal Portsmouth Hospital, who will deliver his address on the evening of Tuesday, July 24th. The Sections, of which there are as many as sixteen this year, will meet on the three following days and will debate a large number of subjects of current clinical or scientific interest. Thus in the Section of Medicine there are to be debates on diabetes and on heart disease in early life. In the Section of Surgery there will be, among other discussions, one on the treatment of acute primary infections of the hand. One of the discussions in the Section of Neurology and Psychological Medicine, that on the sequelae of lethargic encephalitis, will be followed by a demonstration. In the Section of Diseases of Children there will be discussions on acidosis and alkalosis, and on summer diarrhoea. Modern methods of investigation of diseases of the stomach, the value of serological tests in diagnosis, and the part played by fungi in disease are the subjects selected for discussion in the Section of Pathology. There will also be a Pathological Museum, and it is hoped that many members will lend specimens, particularly if they have a bearing on the subjects for discussion in the various Sections. A full programme of the work of the Sections is printed in the SUPPLEMENT for this week.

The Annual Representative Meeting, which will begin on Friday, July 20th, has a full agenda paper. In the current issue of the journal of a certain professional organization a member complains that, whilst the provisional programme of his association's annual meeting has been published practically *in extenso*, the delegates are still in the dark as to the work that lies before them. The fact that detailed reports on the more vital issues of policy to be dealt with at Portsmouth have from time to time been circulated to the Divisions according to established custom is alone sufficient to defend the British Medical Association from a similar charge. With the Annual Report of Council in his hands a representative would be better justified in reversing a familiar request and pleading for less matter and more art; but even so he would probably admit upon reflection that the art which can reduce the record of the year's activities to the volume even of the present report is by no means to be despised. For the Annual Report shows that while the Association continues to grow in membership, as indicated by an increase of over 700 in 1922, and in extent, with the formation of new Branches in St. Lucia and in Tanganyika, its vitality, as tested by the work actually performed and its ability to meet the changing needs of the profession, is amply sufficient to maintain that growth. Amongst the matters covered by the report a few may be distinguished as of more than ordinary interest.

We will place foremost among them the coming visit of the President of the Association to the first session of the Australasian Medical Congress to be conducted under the control of the Federal Committee of the British Medical Association in Australia. Sir William Macewen will, we know, receive a very warm welcome, and the augury is a happy one for the future relations of the central body of the Association and its Branches in the Dominions. At home the Guildhall conference between representatives of various bodies interested in National Health Insurance, and the consequent appointment of a standing committee to consider the various questions involved, maintains the tradition of co-operation in public service, while in another sphere the evidence given before the Lord Chancellor's committee on the law affecting insanity in connexion with criminal cases is of like significance. The successful parliamentary campaign for the withdrawal of the Dangerous Drugs Regulation prohibiting prescription of the drugs by a medical practitioner for his own consumption, and the excision from the Dangerous Drugs (Amendment) Bill of the distinction between a doctor "in actual practice" and other registered medical practitioners, shows the advantage of a close central scrutiny of all legislative and administrative proposals affecting the profession, and the possibility of speedy and effective co-operation in such matters between the Divisions, the central office, and the medical members of Parliament.

Amongst the matters for deliberation and decision two stand out as of primary importance: the hospital policy of the Association, and the proposed scheme for co-operation between the Association and the Society of Medical Officers of Health. The hospital policy is, in its essentials, that which was before the Representative Body last year at Glasgow. The work of the year has been mainly that of consolidation and definition, and while the need for decision as to the vital question of the staff fund in relation to payments made by or on behalf of certain classes of patients remains as urgent as it was twelve months ago, and not less controversial, it will at least be debated with less chance of misapprehension as to the actual point at issue.

Three years have passed since the Representative Body at Cambridge declined to accept the scale of public health salaries submitted by the Society of Medical Officers of Health, and the policy now submitted as agreed between the council of that Society and the Council of the Association is the fruit of three years' experience and deliberation. That experience covers both the short day of reconstruction and inflation and the succeeding period of economic depression and retrenchment; the resulting proposals

should therefore stand the test of the searching criticism to which they will rightly be subjected at Portsmouth. But, after all, the salary scale, though an essential portion of the policy to be considered, is not its only or indeed its chief feature. Neither the Association nor the Society is solely or even primarily interested in remuneration. The development of the powers and obligations of local authorities in regard to public health, abnormally accelerated by war conditions, no less than the continuous growth of preventive medicine, calls for a more authoritative and comprehensive expression of professional opinion than any yet promulgated. That an agreed statement of policy with regard to the development of public health services is presented to the Representative Body together with the new salary scale is in itself sufficient earnest of the future. Finally, the recognition by the Society that all medico-political work should, subject to certain safeguards, be left to the Association, together with the provision for direct representation of the public health services on the governing bodies of the Association, suggests a constitutional solution of a difficulty which at one time threatened a disastrous division.

The Association, through its Naval and Military Committee, keeps in touch with members serving in the Navy, Army, Air Force, and I.M.S. During the war and the years that immediately succeeded the armistice the work of the Committee was heavy, and many matters of importance to each service as a whole were dealt with, as well as a very large number of cases affecting individuals. The value to officers of all services of having a strong organization to take up their grievances when it has been found impossible to obtain redress through the ordinary channels is inestimable. The high-handed action of the Admiralty in retiring compulsorily Senior Surgeon Commanders before the age of 55 was strenuously opposed, but the means by which the rulers of the Royal Navy can be resisted are restricted by law and usage, even when their action amounts to a breach of agreement, which in the case of a private firm would be good warrant for legal proceedings. The Admiralty was not willing to receive a deputation from the Association, and memorandums stating the case for the officers met with a blunt refusal. As the Admiralty remained obdurate it was informed that the Association must advise medical men that if they entered the Royal Naval Medical Service they must realize that so long as the present policy is maintained the Admiralty could not betrusted to keep any engagement it might make with its medical officers.

An Army Order amending the Pay Warrant was issued in 1920, and it was found that Majors were to lose rather than gain in the amount of their retired pay as a result of the revision; some of them, indeed, stood to lose £44 a year. The matter was taken up with the War Office, and the net result was a further revision of the retired pay, which amounted to a gain of £75 all round. By this the Major of twenty years' service got back his lost £44 and received an additional £31 per annum. By the revision in 1920 of the pay of officers of the Indian Medical Service certain increases were received, and this improvement was due to years of persistent work by the British Medical Association. Owing to political and economic conditions the future of this fine service is uncertain, and the uncertainty, which is reflected in the recruiting, is in part due to the way in which the Government of India has played fast and loose. The difficulty all the medical services experience in obtaining recruits is well known, and the Association loses no opportunity of expressing its views on the reasons for the shortage. It is understood that army pay generally is about to come under review, and the Association will take steps to ensure that the pay of medical officers shall be dealt with satisfactorily.

The Association has been officially recognized as the mouthpiece of postal medical officers by the Postmaster-General, and in November, 1921, set up a special subcommittee to deal with matters of concern to them. Something has already been accomplished; it has, for instance, been decided that itinerant postal servants shall as far as is feasible be placed on capitation lists. The fee for such itinerant servants has been raised, and the rule fixing a maximum number of visits to be charged for has been abolished. The fee for emergency cases has been increased, and the half-yearly maximum of 13s. per case has been replaced by a 12s. maximum per quarter. The form of report for candidates for the postal service has been simplified, and the fee for making it raised, as has also the fee for special consultations. A strong effort has been made to obtain equal pay for whole-time post office medical officers, whether male or female, but it has not been possible to induce the authorities to depart from their established custom of paying a lower rate for its women employees than for its men.

Of the work which has fallen to the British Medical Association since the armistice none is more difficult, more complex, more subject to delay and disappointment than that on behalf of the members of the profession scattered amongst the various colonies and dependencies of the Crown, most of them working as whole-time or part-time servants of the several Colonial Governments. True, there has been some advance; but it has not been possible, notably in the case of the West Indian colonies, to consolidate the position which seemed to have been attained in December, 1920, when, after the repeated protests of the Association and the exclusion from the JOURNAL of advertisements of vacancies in these services, the report of the Egerton Committee was published and satisfactory assurances were received from the Colonial Office that effect would be given to its more urgent recommendations. Substantial concessions were then secured as regards pay and conditions of service, particularly in the West and East African groups, but, even in these more favoured areas, the immediate outlook is dark. We have recently called attention to the reduction of personnel in the Kenya Colony Medical Service and to its implications, more especially as regards security of tenure and the licensing of partially qualified medical practice. Now we learn, from the reply of the Under Secretary of State for the Colonies to a question by Dr. Fremantle in the House of Commons, that ordinances have recently been allowed which reduce the standard required for medical registration in British Honduras, the Turks Islands, and St. Vincent.

It is difficult to believe that the position now reached is exclusively determined by the financial difficulties of the several colonies. Indeed, there is available direct evidence that this is not the case. Other considerations are involved, and amongst these we would give a prominent place to the defects in the central machinery for dealing with the affairs of the Colonial Medical Services. Whilst agreeing with the Egerton Committee that a unified Colonial Medical Service, recruited by examination and administered by its own Director-General, is an ultimate rather than an immediate objective, we regret that more advance has not been made along the lines recommended by the Committee and urged by the Association; we are forced to

the conclusion that the existing expedient of a medical advisory committee is an insufficient safeguard for the interests of these services. A day will come when the medical and sanitary services will be generally recognized, in deed as well as in word, as productive services, and the successful development of agriculture and industry amongst a population crippled by preventable disease will be realized as dependent upon the adequate application of the principles of hygiene and sanitation. But the time is not yet, and until provision is made by the Colonial Office for the review of all matters affecting its medical and sanitary services by a medical department with a responsible professional head, those services must continue to depend in the main upon the British Medical Association as a means of bringing their needs and the needs of the communities which they serve before the distant authority which has the ultimate voice in determining the conditions of their development.

PREVENTION OF HEART DISEASE.

In a summary of Sir George Newman's memorandum on Recent Advances in Medical Education in England (BRITISH MEDICAL JOURNAL, May 5th, p. 772) we quoted the General Medical Council's recommendation "that throughout the whole period of study the attention of the student should be directed by his teachers to the importance of the preventive aspects of medicine." The idea of prevention of disease is to be a pervading influence guiding all clinical study and practice. In other words, the "cure" of health, using the word "cure" in its now almost obsolete meaning of care, is to be the ideal rather than the cure of disease. A feeling has crept into the profession, perhaps unconsciously, that the control of certain specific infections in greater or less part by the public health authorities signified that these diseases alone were considered to be preventable, and perhaps less has been done in the way of prevention of other diseases than might have been the case. Janeway, in the Shattuck lecture in 1916, said: "By as much as the proverbial value of prevention exceeds that of cure does the importance of study of the causes of disease surpass that of its manifestations, its results or its treatment." An attempt to discover the causes of disease has not been wanting in this country, but often any systematized attempt to make use of that knowledge has been absent.

In the case of disease of the heart it is noteworthy that the most that has been attained is not the cure of the disease but its care, and comparatively little is heard of its prevention. The natural history of diseases of the heart has been the subject of much study and already much is understood; the mechanism of the heart has been investigated in a way that has rid the symptomatology and the semeiology of many of their traditional inaccuracies; the pharmacopoeia of the cardiologist, after investigation and experiment, has been very much depleted, and the few drugs that remain to him are useful in the treatment of symptoms or of complications, but have little or no effect on the underlying disease. The futility of attempting cure is very generally accepted for most cardiac diseases, and it would appear that the ground has been sufficiently well explored to make practicable the adoption of preventive measures.

Dr. Poynton deals with a very important aspect of this subject (p. 919) in a lecture delivered at the Hospital for Sick Children, where the rheumatic type of disease naturally attracts most attention. The summary of his argument follows very closely the lines that have been adopted by the Society for the Prevention and Relief of Heart Disease of New York, to which Dr. Moon refers when dealing with another side of the same subject (p. 922). The magnitude and importance of the problem are very vividly presented in some of the figures which have been collected by that society. Thus of 5,000,000 men examined for military service in the United States, over 200,000 were rejected on account of heart defects; in one of the largest insurance companies 2.4 per cent. were rejected for the same cause; of 250,000 children in New York schools 1.6 per cent. were found to have heart defects. In England and Wales, of 366,000 school children examined about 1 per cent. were found to have organic heart disease. Mortality tables present a similar picture, and place diseases of the circulation in an unenviable position at the head of the list of causes of death. In 1919 the total deaths in England and Wales from all causes were 504,203, and of this number 51,530 are registered as organic disease of the heart, while pericarditis, acute endocarditis, and angina pectoris account for other 3,112, and diseases of arteries, embolism, rheumatic fever, and chorea add an additional 15,671 to the list. For comparison one may note the figures in the same year for tuberculosis (all forms), 46,312; bronchitis, 45,543; cancer, 42,144; pneumonias, 38,949. Owing to the incidence in different age periods the comparative wastage from these diseases cannot be drawn from these figures alone, but it is obvious that the economic problem is one which demands serious consideration, particularly when one takes into account the years of invalidism that antedate the fatal issue in most cases of heart disease. With a causal condition that in the majority of cases is frankly infective something should be possible to mitigate the extent of these diseases, and in the rheumatic cases the limitation of reinfection would of itself be of immense value. Sufficient has already been done by the New York society to warrant an extension of their experiments. Thus a limited number of so-called "potential cardiacs," children who had had rheumatic fever, repeated tonsillitis, or chorea, but in whom there was no evidence of heart infection, were cared for and watched for an average period of four and a half years. In the rheumatic or throat cases there was no instance of heart involvement, while in the cases that had chorea, either alone or with rheumatic fever, 39 per cent. developed heart lesions, and this occurred in each case in association with a further attack of chorea. It would appear that the more general rheumatic manifestations could be controlled, but when the nervous system was implicated there was less chance of stamping out the infection. This so far supports the contention of Dr. Poynton that "the subject of chorea is well worth most serious investigation." The education authorities in different parts of the country should be in a position to supply valuable statistical information on many of the points with regard to the incidence of heart disease and some of the etiological factors in its production in those of school age, and the incapacity as regards school attendance that results from it. Much good could also be done by arranging to give definite advice to parents of such children on leaving school as to employment suitable for their physical capacity. In one of his reports Sir George Newman writes: "Recent inquiries have furnished abundant evidence of the fact that many children employed for the first time after leaving school break down physically from heart trouble. . . ." In later years a similar condition

obtains. The cardiac cripple, after a period of treatment in hospital which is frequently too short, goes back to his former unsuitable employment only to prepare for a subsequent and possibly last breakdown. No one will deny that years might be added to many lives by adapting work to incapacity, and while with the present amount of unemployment it would be difficult if not impossible to find alternative work for the cardiac cripple, the problem is one which in more normal times ought to be faced.

In any scheme for the prevention of heart disease there will be room for the co-operation of many forces, and practitioners, school medical officers, hospital physicians, venereal disease specialists, throat and dental surgeons, and district nurses would have to be enlisted. Additional auxiliary hospitals or convalescent homes would be required, as residence in ordinary hospital is necessarily too short and most convalescent homes object to the admission of cardiac cases; in any event there would need to be strict supervision of exercise and recreation.

Dr. Poynton outlines some avenues of attack while dealing more particularly with heart disease in the young. The attention of the student should be drawn immediate and remote effects as they affect the child so that he may appreciate the difference in their immediate and remote effect as they affect the child or the adult. The education of the public, and specially school teachers, in the causes that operate to produce these effects would lead to the earlier enlistment of medical aid when prevention would be most efficacious. In New York much good has resulted from the institution of cardiac clinics, where patients and potential patients are looked after and periodically examined, from the segregation of cardiac cripples in special schools or departments, and from convalescence hospitals, where those recovering from recent attacks have a prolonged period under daily observation.

The subject is to be brought before the Section of Medicine at the Annual Meeting of the Association, and the arguments and information contained in the papers by Dr. Poynton and Dr. Moon will serve a useful purpose by preparing the way. Sporadic and isolated attempts at dealing with a subject of this magnitude would probably prove very ineffectual, and some central controlling or advisory body would almost be necessary for efficient organization.

THE SPHENOIDAL SINUS.

As recently as the last decade of last century there was to be found in a work on surgical anatomy—we have unfortunately mislaid the reference—a statement "that the surgical relations of the sphenoidal sinus might be dismissed in a few words, as it was evident from its situation in the depths of the head—in the very base of the skull—that it was not and never could be reached by surgical measures." This prophecy was almost as unhappy as Erichsen's *obiter dictum* that surgery had reached its final and ultimate limits, uttered in 1873, when Lister was still in Edinburgh working at the development of the antiseptic system.

Since the beginning of the present century the opening and draining of the sphenoidal sinus has come to be recognized by expert rhinologists as a proper operation in suitable cases. Moreover, growths have been removed from the sinus, and it has been traversed by the surgeon as a means of approach in attacking disease of the pituitary gland. But the wide possibilities of disease which may result from septic invasion of this cavity are still perhaps not generally known, and the two articles by Sir StClair Thomson in the current number may well give food for thought. It was in this JOURNAL that, in 1906, he published an article in which the cerebral and ophthalmic complications of sphenoidal suppuration were illustrated by the records of no fewer than 42 *post-mortem* examinations. One of his articles in our present issue is of particular interest to the physician and general practitioner. It shows how suppuration in the accessory sinuses of the nose, and particularly in the sphenoidal sinus, may be the sole cause of an acute illness of several weeks' duration. The other throws light on the association of retrobulbar neuritis with nasal suppuration. It adds one more to the list of cases proving that the cause of an optic atrophy may be found in a suppurating accessory nasal sinus, and be prevented by draining it. Such records have appeared in this JOURNAL before.[1] How frequent this association may be has still to be ascertained. It has been suggested that retrobulbar neuritis may be caused by simple want of ventilation of the ethmoidal and sphenoidal cavities; that "the mere presence of pus in the sinuses is by no means the usual or only cause"; and that these cavities should be opened and ventilated in certain cases, even in the absence of suppuration. Even should a retinitis clear up after the opening of a healthy sinus, this is no definite proof that the condition of the sinus was the cause. The doctrine is not free from danger, and Sir StClair Thomson, though he quotes, does not support it. He is concerned with cases of undoubted suppuration.

Surgical treatment has been energetically criticized by Harvey Cushing, who states that "many unhappy consequences of indiscriminate and ill-advised operations on the accessory sinuses" have come to his attention, as he is often urged to see patients *in extremis* from meningitis the result of operation by inexpert hands on the ethmo-sphenoidal cavities. These technical disasters should not occur, and are, we believe, unknown or rare in the hands of well experienced rhinologists. But Cushing also doubts the frequency of the association of sinus affection and visual disturbance, and protests against the latter being attributed to a cause in the nasal accessory cavities simply because other possible causes can all be excluded. As he observes, "when a retrobulbar neuritis is said to be accompanied by 2 or 3 diopters of swelling we are certainly dealing with something which a hyperplasia of the mucous membrane lining the accessory sinuses is not capable of producing."[2]

Surely this matter is one which might be advanced, if not settled, by ophthalmologists and rhinologists discussing it conjointly. The former can tell of cases where causes other than nasal were at work; of cases where no clear cause could be determined; and of cases which recovered spontaneously. The rhinologist can tell of cases in which he appeared to succeed, of others in which he failed, and of the local conditions he met with in the suspected accessory nasal sinus.

Such an investigation might be expected to bear fruit in London now that we possess the finest collection in the world of specimens of nasal anatomy. The Onodi collection, which was secured and presented

[1] Bronner, Adolph: A Case of Thrombosis of the Cavernous Sinus due to Empyema of the Sphenoidal Sinus. BRITISH MEDICAL JOURNAL, 1904, vol. ii, p. 1310.
Fish, Henry Manning: A Study of Optic Neuritis in Connexion with Nasal Accessory Sinus Disease. Ibid., 1907, vol. ii, p. 1218.
Bradburne, A. Alison: Bilateral Optic Neuritis due to Sphenoidal Sinusitis. Ibid., 1915, vol. i, p. 109.

[2] Accessory Sinus Disease and Choked Disk. *Journ. Amer. Med. Assoc.*, vol. 75, No. 4, p. 225, July 24th, 1920.

to the Royal College of Surgeons through the public spirit of British laryngologists, should go far in helping to settle this question. One valuable clinical point has already been learnt by all who have looked at these beautiful dissections—namely, in all cases of retrobulbar neuritis, even when unilateral, if a sphenoidal focus is suspected, both cavities must be opened and drained, for anatomical abnormalities are so common that the sphenoidal sinus on one side may be in contact with the opposite optic nerve. This illustrates one of the many lessons ophthalmic and nasal surgeons may learn from this unique collection, which is full of interest when studied in connexion with the results of clinical observation.

THE APPEAL FOR CANCER RESEARCH.

WE publish elsewhere (p. 947) the text of an appeal to the public to subscribe to a fund established by a body newly organized with the title "British Empire Cancer Campaign." It is addressed to the people of this country and of the Dominions. There is a proverbial saying that he who sees the end sees the means, and we are prepared to believe that it applies in this instance, but we confess to some hesitation, due, in the main, to the terms of the appeal itself.

Cancer is an implacable disease, and the dread of it is present somewhere at the back of the mind of many men and more women who have reached middle age, especially if they be at all introspective. About its cause we as yet know little, beyond the facts that it sometimes follows long-lasting irritation, and that some irritants seem more apt than others to produce it. But there are a multitude of cases to which this explanation can be applied with difficulty, if at all. In fact, we do not know that all the cases to which the term "cancer" is habitually applied are due to the same class of cause. This is one of the reasons which render the problem difficult even of approach. We cannot be sure that frontal attack is the right strategy. In the heart of man the time is ripe and over-ripe, but has scientific medicine reached the stage when the attack can best be delivered in this way? Have we advanced far enough in biochemistry, in cytology and immunology, and, it may be added, in the study of the invisible viruses, to be sure that the line of progress is not along the roads they open? The conclusion of some German investigators who entered on the quest with much enthusiasm was that scientifically the time was not ripe.

It is for reasons of this order that we hesitate to accept some passages of the appeal; they are no doubt guarded by other passages, but they may easily be read to promise too much and too quickly; before now enthusiasts speaking in the name of medicine have promised more than could be fulfilled. This is not to carp at the excellent aim of the promoters of the appeal, to which we do not doubt the public will make a generous response; there is no question that more avenues of attack can with advantage be opened up and larger forces employed in developing statistical and epidemiological as well as laboratory methods; and if we are content with a cure, as to-day well we may be, the help of the new and vigorous science of pharmacology, which already holds some hopes, must be enlisted. And there is radiology—radium and the intensive x rays. All this means money; it means men also, and wise direction. But from the money aspect alone the public has a right to be assured that the funds it supplies will be wisely expended. Here again we cannot help a certain hesitation; the signatories of the appeal, many of them, are highly qualified to allege the seriousness of the problem, but, speaking quite frankly, we cannot think that they are equally competent to direct the measures that can best be taken for its solution. That perplexing task should be resigned to persons tried in the direction of research, well experienced in what has been picturesquely described as its "growing edge"—where, for instance, to continue the metaphor, the individualism of the living cell, and its power of maintaining itself and multiplying in an unwonted environment, is being watched and tested. There is no lack of such experienced advisers, and there is also, as is enumerated elsewhere (pp. 947-950), a respectable number of leaders experienced in this particular department of research.

The first duty of the promoters of this campaign is, no doubt, to obtain money by a fair statement of our present disastrous position to the public. The second, which should at once be undertaken, is to apply to the Imperial Cancer Research Fund, the Medical Research Council, and the Ministry of Health, asking them to take steps for the appointment of an advisory committee composed of men experienced in general medical research, reinforced by others specially skilled in this particular matter. Otherwise money, and what is vastly more important, time and energy, will be wasted.

THE HISTORY OF BART'S.

"THE history of St. Bartholomew's Hospital from its foundation in 1123 to the present day is a part of the history of England which has never before been written at length." With these words Sir Norman Moore opened the preface to his monumental *History of St. Bartholomew's Hospital*, which was published early in 1919 in two large volumes, of some 1,600 pages in all, with a wealth of sumptuous illustrations. The writing of it occupied his spare moments during more than thirty years of a life of remarkable activity. His son, Sir Alan Moore, says in an interesting memoir in the April issue of the *Dublin Review*: "The hospital records include many hundreds of mediaeval charters, each about the size of a half-sheet of notepaper, containing usually ten or twelve lines of contracted mediaeval Latin. All these he read, besides many others at St. Paul's, the British Museum, and elsewhere. He printed in full, or gave extracts from, more than five hundred belonging to St. Bartholomew's alone. Cartularies, journals, ledgers, and many other manuscripts had to be perused and their contents weighed. . . . Moore read the old records till, for him, mediaeval London lived again. He visited many places mentioned in the charters, talked with the inhabitants and discovered links with the past. His book is worthy of the great hospital and ancient city of which it tells so much." Norman Moore died six months before the octocentenary celebrations of the great foundation whose history he wrote, and it has fallen to other hands to prepare for this occasion a shorter chronicle and an anticipation of future progress bearing the title *A Short History of St. Bartholomew's Hospital, 1123-1923*.[1] The greater part of this handsome volume—well written, well printed on good paper, well illustrated, and well bound—is from the scholarly pen of Sir D'Arcy Power, whose intimate knowledge of the subject is known to all Bart's men and to every student of the history of medicine. There is no man better fitted for this labour of love, and his outline of the past and present of the hospital gives

[1] *A Short History of St. Bartholomew's Hospital, 1123-1923.* Past and Present, by Sir D'Arcy Power, K.B.E., F.R.C.S. The Future, by H. J. Waring, M.S., F.R.C.S. London: Printed for the Hospital. 1923. (7¼ x 9¾; pp. xv + 201; 52 illustrations.) Copies may be had for 11s. (including postage) from Mr. Geoffrey Keynes, F.R.C.S., St. Bartholomew's Hospital, E.C.1.

a clear and graphic account of the progress of an institution which has remained for eight hundred years on the exact site where Rahere placed it in the reign of Henry I. As our readers must be well aware, Rahere established his hospital and his priory at the same time, and the neighbouring church of St. Bartholomew the Great—described by Dean Inge as "still the most beautiful parish church in London"—which held its own celebration in March, is participating in next week's ceremonies. The relationship between the kindred foundations is mentioned in the present volume, but the progress of the hospital naturally forms the leading topic. Sir D'Arcy Power's review of the past, based on original records, carries us rapidly but pleasantly down the centuries, beginning with the earliest days of the hospital and the objects of its founder. He discusses in turn the various features, functions and functionaries, and the customs and possessions, which helped to make St. Bartholomew's what it was and what it is. Next comes an account of the organization of the hospital and its medical college at the present day. Mr. H. J. Waring follows with a forecast of future developments, which puts vividly before the reader two alternative schemes of reconstruction; in this he has been ably assisted by a profusion of architectural plans by Mr. T. A. Lodge. So far as can be judged in the twenty-four hours between the receipt of the book and the time of going to press, this commemorative volume for next week's celebration is a work which all Bart's men and many others whom it concerns will wish to possess. A hasty turning of the pages gives us the idea that it is one of those few books which are worthy, in the words of Bacon, to be chewed and digested—that is, to be read wholly, and with diligence and attention. The pictures are of exceptional interest, and reproduced with great skill.

THE UNITED STATES AND THE OPIUM CONVENTION.

IN the issue of the JOURNAL for April 7th attention was directed to the reawakened interest of the United States of America in the traffic in dangerous drugs. While the League of Nations has been preoccupied with the consideration of what may be regarded as the "legitimate" use of opium and the other scheduled drugs, the House of Representatives has been inquiring and reporting to the President in favour of very drastic international action. Last January Mr. Stephen G. Porter introduced a resolution to the House of Representatives urging the President of the United States to seek "effective control of these drugs by limiting the production thereof to the quantity required for strictly medicinal and scientific purposes, thus eradicating the source or root of the present conditions, which are solely due to production many times greater than necessary for such purposes." To this end the President was requested "to urge upon the Governments of Great Britain, Persia, and Turkey the immediate necessity of limiting the growth of the poppy and the production of opium and its derivatives exclusively to the amount actually required for strictly medicinal and scientific purposes," and also to urge upon the Governments of Peru, Bolivia, and the Netherlands (in respect of Java) the like necessity to restrict the production of coca leaves in a similar fashion. In February the Committee on Foreign Affairs took evidence from medical officers of health, prison governors, and social workers which indicated an amazing growth of the abuse of drugs of addiction in the United States in recent years. There were reported to be more than a million addicts in the States; heroin was said to be largely employed by the vicious and criminal underworld, and it was asserted that even young persons were being introduced to indulgence in and abuse of these perilous narcotics. The Secretary of State for Foreign Affairs, Mr. Charles E. Hughes, has written to Mr. Porter saying that "the restriction of the commercial cultivation of the opium poppy and the coca leaf to quantities exclusively required for strictly medicinal and scientific purposes is one with which I am in entire accord." The President is requested to report the results of such action as he may take, on the lines suggested, by December next. From a recent bulletin issued by the League of Nations it would appear that some forty States have now brought the International Opium Convention of 1912 into force; nine others have signed but not ratified the convention (Argentine, Colombia, Costa Rica, Esthonia, Latvia, Lithuania, Paraguay, Persia, and Switzerland). Four Powers had not, in March of this year, adhered in any way to the convention (Turkey, Afghanistan, Abyssinia, and Lichtenstein). On the other hand the United States, Germany, and the Free City of Dantzig, though outside the League of Nations, are nevertheless parties to the convention; and it is to be hoped that the Council and Assembly of the League may, before the close of this year, secure the more general and effective enforcement of the Opium Convention, now more than ten years old. Meanwhile, seizures of dangerous drugs in the course of illicit or fraudulent transit are reported from various sources. The Canadian Government seized 442 lb. of morphine cubes, 117 lb. of heroin, and 65 lb. of cocaine, falsely consigned as "cocoa powder" from Switzerland. Again, the smuggling of morphine into China through the French and British Post Offices is reported, and a Danish firm was found to have been exporting morphine and opium to Amoy at the rate of 300 kilograms a year, some of which appears to have been of British origin. It will be remembered the Home Secretary, in connexion with the recent conviction of H. M. F. Humphrey, has cancelled the licence of Messrs. Whiffen and Sons of Battersea (also trading under the name of J. A. Wink and Co.), and they will accordingly not in future be allowed to buy, manufacture, sell, or have any dealings in the preparations to which the Dangerous Drugs Act (1920) applies. There is evident need for keeping constant watch over the international traffic in these drugs, so long as the production continues vastly to exceed medicinal requirements and thus encourages illicit commerce. That the opium trade is not without its financial aspects is disclosed by the recent announcement in the House of Commons that the Straits Settlements, the Malay States, Brunei, and North Borneo respectively derive 37, 16.7, 16, and 12.3 per cent. of their revenues from opium. There is a good deal yet to be done before we can claim imperially that our withers are unwrung. As we learn that Mr. Stephen G. Porter is representing the United States at the meeting of the Opium Committee now in session, some interesting and, we trust, fruitful discussions are doubtless proceeding.

LEAGUE OF NATIONS HEALTH COMMITTEE.

THE sixth session of the League of Nations Health Committee began in Paris on May 26th, and the discussions which have taken place there show that co-operation in public health matters among the various Governments has greatly developed in the two years since the League Health Organization was founded. In the field of epidemiological intelligence and public health statistics considerable progress has been made in organizing a regular and rapid collection and distribution of information, and it is hoped by the League Health Organization that in time it will become a central clearing house for all such matters. Reports on the progress of the three committees of inquiry working under the auspices of the Health Organization were discussed. The first is a small committee of experts set up to investigate the prevalence of sleeping sickness and tuberculosis in tropical Africa since the war. The second is the joint subcommittee of the League of Nations Opium and Health Committees which deals with the present position of the subject as set out

above. The third is a joint subcommittee of the Health and Transit Committees, which is collecting information to serve as the technical basis for a conference between the various European States which have navigable inland waterways, for the purpose of co-ordinating and tightening up sanitary control and anti-epidemic measures without interfering with the normal working of these arteries of trade. Further reports which were discussed concerned the progress of the applied research work, which aims at international agreement as to the methods of establishing serological tests in order to facilitate international co-operation in improving the whole technique of immunization by serum injections. It is proposed by the Health Organization that a similar programme of research work, conducted in many countries on a common plan, should be instituted in regard to certain biological products used as drugs, such as digitalis, pituitary extract, and insulin. The question of further perfecting and developing the system of visits of international groups of public health officers to study the sanitary systems of one or two countries was also considered. The first of these study visits, so-called "interchanges," took place in Belgium and Italy, the second in Great Britain and Austria; a third (for specialists in the campaign against malaria) is at present taking place in Italy, and another visit is being arranged to the United States.

THE NATURE OF RICKETTSIA BODIES.

BODIES which have been regarded either as definite species of "Rickettsia" and named accordingly, or placed in this group as being of similar type, are now known to be of widespread occurrence among ectoparasitic arthropods, and fresh species are being discovered continually. Dr. H. M. Woodcock holds a different view from that of many authorities as to the nature of rickettsias, and in a recent paper[1] he describes the way in which structures morphologically indistinguishable from rickettsia bodies appear as granular end-products of the digestion or lysis of cellular elements. Although the rickettsias are usually classed with the bacteria rather than the protozoa, they differ from well known bacteria in two respects: they stain best with Giemsa's stain, but appear bright red to lilac instead of intense purple, and they can be cultivated only with the greatest difficulty, and usually in association with other organisms, such as flagellates, from the disintegration of which similar granules are produced. On morphological grounds it is impossible to distinguish the granular end-products of the digestion of cells from the rickettsia granules, nor does cultivation enable us to distinguish the true from the false. The rickettsia-like granules all appear to be of the same fundamental character; the morphological variations which occur may possibly be explained by the action of slightly differing enzymes in the case of different types of cell, or even in the same cell type on different occasions, and upon the different kinds of organic matter on which these enzymes act, such as haemoglobin, nuclear material, and parasites. The epithelial cells of the louse take in and absorb haemoglobin, which they metabolize in such a manner that no pigment is produced; and the intracellular rickettsias, in Dr. Woodcock's opinion, should be regarded as having been produced as the result mainly of an altered abnormal form of metabolization of the blood upon which the louse feeds. Diseases such as typhus, in which rickettsias have been demonstrated, are, he considers, due to pathogenic enzymes, and the granular elements are the inevitable witnesses of the digestion of the cells. For him the virus is the invisible pathogenic enzyme, attached or adsorbed to and carried by the protein particles or bodies of various kinds which are constantly found in such diseases. The virus of typhus in the blood is, he holds, intimately associated with the platelets, and lice can be experimentally infected by inoculation with platelets, success being evidenced by the subsequent production of rickettsia bodies. Dr. Woodcock's argument is supported by a number of excellent photomicrographs showing the types of granules which result from cell digestion or lysis, and which he considers have often been mistaken for rickettsia bodies.

[1] *Journ. R.A.M.C.*, February-April, 1923.

PASTEUR CELEBRATIONS IN FRANCE.

THE official French celebration of the centenary of Pasteur began in Paris on May 24th, when the many delegates from universities and institutions throughout the world attended a reception given by the President of the French Republic. On the following morning the delegates were welcomed by Dr. Roux at the Pasteur Institute; a bust of Pasteur erected in the gardens of the Institute was unveiled and wreaths laid at its foot by foreign delegates, who afterwards visited the museum and the crypt, where is the tomb of Pasteur. Later in the day there was a great meeting in the amphitheatre of the Sorbonne, presided over by the President of the Republic, who was accompanied by the Ministers, by members of the diplomatic corps, by members of the five academies of the Institut de France and the Académie de Médecine, and by foreign delegates, to the number, it is said, of some seven hundred. The proceedings began with the unveiling by M. Paul Appell, Rector of the University of Paris, of a marble tablet placed by the university in the Salle des Autorités, bearing an inscription stating that it has been erected on the spot where "le grand Français et le grand Anglais Lister se sont embrassés" to commemorate "cette étreinte fraternelle, symbole de l'amitié de deux peuples." Afterwards the Marquess of Crewe, British Ambassador in Paris, expressed the deep appreciation of this homage to Lister paid in the heart of the intellect of France. The popular celebration took place on Sunday, which was a flag day in Paris and the chief towns of France, and badges were sold for the benefit of the laboratories of France. In the afternoon the delegates attended a reception given by the City of Paris at the Hôtel de Ville. On Monday a visit was paid to Versailles, when a bust of Pasteur given by his daughter and son-in-law, Mme and M. Vallery-Radot, was unveiled in the Galerie de Glaces. The President of the Republic at the end of last week started on a tour, during the course of which he is taking part in celebrations at Arbois and Strasbourg.

AMONG the names in the short list of honours bestowed on the occasion of Mr. Bonar Law's retirement are those of Sir Thomas Horder, who receives a baronetcy, and Dr. Chichester Gould May, who is created a knight. They have shared the anxiety which the state of Mr. Bonar Law's health has caused during the last few months.

WE regret to record the death on May 29th of Professor John Chiene, C.B., Emeritus Professor of Surgery in the University of Edinburgh. Professor Chiene, who was in his 81st year, resigned his chair in 1909. We hope to publish an obituary notice in an early issue.

SIR CLIFFORD ALLBUTT will attend the annual dinner of the West London Medico-Chirurgical Society at the Café Monico on June 19th to receive the triennial gold medal presented by the society to a distinguished member of the profession.

THERE is no better check on extravagant administration in public institutions than comparison with those of a similar character. This is only possible, however, if there is a standard system of accountancy so that the figures are really made comparable. With a view to securing such a standard method of book-keeping in tuberculosis institutions the Ministry of Health has issued a skeleton form of accounts (Form T.90) the adoption of which will make it possible to ascertain the average weekly cost of a patient not only for the whole of the services rendered but also under various subheads such as salaries, provisions, drugs, lighting and fuel, laundry, etc.

CANCER RESEARCH.

We have received for publication the following appeal, which has been issued to the press this week by the provisional executive committee of a newly constituted body, the British Empire Cancer Campaign. The full list of the committee, with particulars of the institutions already engaged in cancer research which are willing to be associated with the new organization, will, we understand, be published at an early date. The appeal is made under the auspices of the British Red Cross Society, which will receive subscriptions.

BRITISH EMPIRE CANCER CAMPAIGN.

30th May, 1923.

Sir,

Cancer, in spite of the advances which have been made, both in diagnosis and treatment, is still the most common single cause of death in persons over 30 years of age, and is becoming so in an increasing degree. During 1920, in England and Wales, nearly 43,000 persons over 30 and upwards died of cancer. In 1921, the last year for which the Registrar-General's figures are avilable, the corresponding number was 45,328. During that year one in every seven deaths from the age of 30 onwards was caused by cancer.

We are still ignorant both of the causation and cure of cancer. Many other diseases have yielded their secrets to patient investigation, and there is no reason to suppose that the problem of cancer will not eventually be solved. Yet thousands of suffering men and women, and those who suffer with them, are asking how long they must wait, and if there is nothing that can be done to hasten a discovery which will bring relief to those whose outlook is to-day so hopeless.

The answer to this question is clear. The first step towards finding the cure of cancer is to discover its cause. To find that cause no effort must be spared. Every possible line of research must be diligently explored. More men must be set free to devote themselves wholly to research, and their work must not be hampered or prevented by want of money.

Much research work is being carried on and considerable advances have been made in the technique of operations designed to remove the disease in its early stages or retard its progress in more advanced cases. All honour is due to those who have done and are doing the work, but a vast amount still remains to be done. Impressed by the need for immediate action, we have joined together to found a movement which will co-ordinate and support research on cancer throughout the British Empire.

This new concerted movement will be called the British Empire Cancer Campaign. It will be governed and directed by an Executive Council, the members of which will act as chairmen of small working committees, each dealing with a separate aspect of the cancer problem.

Medicine, surgery, human pathology, chemistry, physics, radiology, animal and plant pathology, hygiene and vital statistics, will all be represented by committees whose work will be co-ordinated by the Executive Council acting, in fact, as a central clearing house. The Council is anxious to make it clear from the outset that it has no wish to interfere with the work already being carried out. Individuals and institutions now working on the cancer problem will be helped and encouraged, and, where practicable, financially assisted.

In this way investigation can be carried out simultaneously along many lines, and the results of these inquiries will be brought into the common stock of knowledge. A discovery in any one branch will be made known to all, and may lead to discoveries in other branches. It is in this co-ordination of effort that our most confident hopes are placed.

No one can say with certainty that we shall succeed in our quest to find the cause of cancer, but a movement so broad must inevitably advance the knowledge which we have of this disease, and every step forward brings us nearer to our goal.

The British Red Cross Society has placed its organization and machinery at the disposal of the Council of the Campaign, and a generous donor has already given a sum sufficient to cover the preliminary expenses of this appeal. All future contributions will therefore be expended in encouraging, assisting, organizing and administering systematic research and treatment on a scale that has hitherto been impossible.

To do this a large sum of money will be needed, and we appeal with confidence to the British public in the United Kingdom and in the Dominions and Colonies overseas. During the war we had ample evidence of the capacity of this Empire for united and intensive effort, and in no field was it more effectively shown than in the relief of suffering and the prevention of disease. Is it too much to hope that the same spirit will animate our people when they are called upon to wage war against an enemy that is in their very midst? We plead with all earnestness that we may be given the means wherewithal to carry through the task which we have set ourselves to accomplish, and thus to bring relief and hope to those whose lives are now darkened by suffering and despair.

The Fund will be administered under the direction of a strong finance committee.

Cheques should be made payable to the British Red Cross Society, crossed "British Empire Cancer Campaign," and sent to the Hon. Sir Arthur Stanley, G.B.E., C.B., 19, Berkeley Street, London, W.1, or to Lloyd's Bank, Ltd., 71, Lombard Street, or to any of their branches or agencies at home or abroad.

We are, Sir, yours faithfully,

ATHLONE.	F. L. HOPWOOD.
J. BLAND-SUTTON.	THOMAS HORDER.
NAPIER BURNETT.	ROBERT KNOX.
DAWSON OF PENN.	G. LOCKER-LAMPSON.
J. B. FARMER.	J. P. LOCKHART-MUMMERY.
F. E. FREMANTLE.	EDWARD MARSHALL-HALL.
RICHARD GARTON.	J. BEAUMONT PEASE.
CHAS. GORDON-WATSON.	BERNARD SPILSBURY.
R. A. GIBBONS.	ARTHUR STANLEY.
ALFRED GREENWOOD.	WILLIAM WILLCOX.

Communications should be addressed to the Honorary Secretary, Godfrey Locker-Lampson, Esq., M.P., at 19, Berkeley Street, W.1.

The British Empire Cancer Campaign has been registered as a company limited by guarantee.

CANCER RESEARCH NOW IN PROGRESS.

The appeal, it will be observed, promises to encourage, and help financially where practicable, individuals and institutions now working on the cancer problem, and distinctly repudiates any wish to interfere with work already being carried on. We have thought, therefore, that it would be interesting to put together from information at present available some particulars of the institutions engaged in such work.

THE IMPERIAL CANCER RESEARCH FUND.

The Imperial Cancer Research Fund was founded in 1902 by the joint action of the Royal Colleges of Physicians and Surgeons; representatives of the Royal Societies of London and Edinburgh, the Royal Veterinary College, and other scientific bodies, and of several Government departments, were added to the Executive Committee, which is the governing body. From the beginning the main efforts of the Fund were directed to the development and extension of the experimental method to the study of cancer. Statistical investigations on the incidence of the disease in man at home and abroad were undertaken in conjunction with the Registrar-General's Office and through the Colonial and India Offices. An experimental study of the part played by heredity in modifying the incidence of cancer was undertaken and carried on for many years.

Coincidently with the starting of the Fund, the foundations of the experimental study of cancer in laboratory animals were laid by Jensen and Borrel, and the workers of the Fund took a large part in its development. The detailed analysis of the phenomena of transplantation and the production of resistance to inoculation was carried out. In particular, the significant limitation of the resistant condition to prevention of successful grafting, and the failure of these reactions in animals spontaneously affected by the disease, were worked out and their importance insisted on. During the war, by rigid economy of effort, the Director, Dr. J. A. Murray, found it possible to maintain the essentials of the working organization. In consequence the other institutes at home and abroad which had suspended operations were able to call on the Fund for material enabling them to begin work again without delay.

Since the war, the experimental production of cancer by the application of tar has been energetically studied. The essential characters of cancer cells and the subtle distinctions between them and normal cells have been investigated by the method of tissue culture and by a study of the processes of respiration of surviving tissues. In addition an elaborate investigation of the relation of the growth of cancer to diet has been carried through, defining the effects of vitamin and other specific deficiencies both in normal animals and in those carrying inoculated tumours.

A summary of the published work in each year is given in the annual report, along with an account of the administration and financial position of the Fund by the Executive Committee and treasurer respectively. Full accounts of the investigations are published from time to time in the scientific reports, of which seven have already appeared (Taylor and Francis, Red Lion Court, Fleet Street, E.C.4).

CANCER HOSPITAL RESEARCH INSTITUTE, LONDON.

The Cancer Hospital, founded in 1857, possesses a well designed and well equipped Research Institute, built a few years before the war. For the last two years it has been under the directorship of Dr. Archibald Leitch, with whom are associated Dr. E. L. Kennaway as chemical pathologist and Dr. H. J. B. Fry as clinical pathologist. Working in close connexion with the surgical and radiological departments of the hospital they have unrivalled opportunities of being familiar with all sides of the cancer problem. The chemical and biochemical investigation of tumours and of serum from cancerous patients, histological examinations of tumours of all kinds, the study of cell and tissue changes under treatment by *x* rays and radium, and the detailed investigation of operative and *post-mortem* material from the point of view of practical surgical pathology, represent some of the numerous lines of research provided by the association of clinical and pathological departments. From the purely experimental side work has been proceeding on an intensive scale, mainly on inquiries into the causation of cancer. We published in the JOURNAL last December three important papers from the Cancer Hospital Research Institute on the experimental production of cancer, and we hope soon to publish two more. The research staff have been endeavouring to add to the number of substances which are capable of producing tumours, and though they have already contributed three or four such substances, we understand that scores of suspected agents have been tested. Studies of the early changes preceding and accompanying tumour formation, chemotherapeutic essays in experimental cancers, and the investigation of the conditions under which occupational cancers arise, constitute at present the main objectives. The striking feature about the Cancer Hospital is the particularly friendly co-operation between the surgeons, radiologists, and laboratory staff, so that each individual member is conversant with the observations and problems of the others. The governing board appears to be very progressive.

THE MIDDLESEX HOSPITAL.

The Middlesex Hospital Cancer Charity was founded in 1791 with the object of alleviating suffering and investigating the disease. Until 1900 its activities in the latter direction consisted chiefly in the compilation of records and publication of papers on cancer from time to time by members of the hospital staff. In 1900, largely owing to the initiative of Sir Alfred Pearce Gould, laboratories were opened for investigation of malignant disease by modern methods, and Mr. A. G. R. Foulerton was appointed director. On his resignation in 1903, Dr. W. S. Lazarus-Barlow was elected to the office, and held it until in 1920 it was merged in a Professorship of Experimental Pathology in the University of London, to which he was appointed. The avowed object of the change was to widen the range of activities available for cancer research and enable it to be taken up in any department of the Medical School that seemed advisable. It coincided with the establishment in the school of University Professorships in Physics, Chemistry, Anatomy, Physiology, and Pathology. Recently a University Reader in Biology has been appointed. From its first inception the charity has grown continuously, but benefactions have been mainly on the clinical side. Specifically for research the cancer laboratories (which were built and equipped by the trustees of the Barnato bequest in 1910) have to rely upon the income of a sum of £20,000 and £1,000 per annum for ten years recently given by Sir W. Veno, and for the remainder of the expenditure on annual voluntary contributions. The amount thus obtained is inadequate to the complexity and difficulty of the subject, and extension in many directions is possible and desirable. The assets for cancer research which the Middlesex Hospital possesses are 92 beds in the charity dedicated to cancer patients and the resources of the Medical School completely equipped in all branches.

During the twenty-three years the laboratories have been in existence the advantage of their close association with the hospital wards has been shown by the very practical character of the researches carried out and by the names of those who have held assistantships or scholarships. Among those who have held appointments may be mentioned Mr. Sampson Handley, Mr. Gordon-Taylor, Mr. Victor Bonney, Mr. Somerville Hastings, Dr. Henry MacCormac, all of whom are now members of the honorary staff of the hospital; Mr. Cecil Rowntree, surgeon to the Cancer Hospital, Fulham Road; Dr. Archibald Leitch, director of the Cancer Research Laboratory at the Cancer Hospital; and Dr. J. C. Mottram, director of the Pathological Department of the Radium Institute. The practical character of the researches is indicated by the fact that all the records of the hospital have been worked up statistically and a number of monographs on cancer at the principal primary sites have been published; investigations have been conducted into the increase of cancer, and attempts made towards earlier and better diagnosis. Much work has been done in reference to radium and *x* rays and as to the production of cancer in lower animals by these agents. Research in the therapeutic value of radium or *x* rays has been instituted, and since 1914—though much interrupted by the war—investigations have been conducted, and are still in progress, with the hope of causing experimental animals to develop an immunity towards cancer. Sufficient success has been obtained in the case of transplanted tumours in rats to apply the principle, with caution, to man, and during the past two years it has been utilized in the treatment of selected patients in the wards. It is too early to speak of the results, but at least it may be said that they are hopeful. At the present time experimental endeavours are being made to facilitate the technique and heighten the degree of induced immunity. In these animal experiments, as always, the underlying thought in the mind of the investigator is that they must be applicable to the human sufferer. The Medical Research Council, in addition to the important allocation of radium mentioned below, has supplied the services of Dr. Helen Chambers for work in Dr. Lazarus-Barlow's department and of a whole-time assistant. In laboratories attached to a general hospital and medical school the practical as contrasted with the academic side of research comes to the fore, and this is the guiding principle of the work at the cancer laboratories of the Middlesex Hospital.

MANCHESTER.

Research work on the various aspects of cancer is being carried out in several departments at Manchester. At the Royal Infirmary, the new *x*-ray department is one of the most completely equipped of its kind in the country. With the advent of the intensive *x*-ray therapy a research committee was instituted, consisting of physicians, surgeons, radiologist, pathologist, and physicist, to investigate the effects of this form of treatment in cancer. For this purpose a research scholarship in radiotherapy for the intensive treatment of cancer has been instituted, and the first scholar spent six months on the Continent studying the latest technique in *x*-ray therapy. The new apparatus is all at the Royal Infirmary, where the investigations are in their initial stages, and two separate outfits for the intensive *x*-ray treatment of cancer are in use. Although it is too early to speak with any confidence, as the work has only been in progress for about twelve months, yet the initial response in carcinoma is considered to have been satisfactory. The late results cannot, of course, yet be stated. In sarcoma the outlook appears more hopeful, and in some cases the primary growth has apparently completely disappeared. Six beds are set apart at the Radium Institute and the Christie Hospital for patients undergoing intensive *x*-ray treatment for the relief of inoperable carcinoma. So far about 100 cases have been treated. At the Radium Institute thirteen beds are set apart solely for the treatment and investigation of cases of cancer; 668 cases of cancer were treated last year, and the whole work of the Institute is really an investigation into the cause of cancer. A new

research laboratory is shortly to be equipped; all the cases at the Institute are subject to pathological investigation, and careful records are kept which are available for statistical study. Results at the Institute show that 7½ per cent. of all cancer cases (many inoperable) under treatment are alive and well after periods of two to seven years. A special research into the physical chemistry of serum in health and disease has recently been undertaken with the help of the Institute's radium; it has been found that alpha, beta, and gamma rays have a very marked effect on serum. A technique has also been devised for following changes in the colloidal condition of whole blood, whereby only a very small quantity of blood is required for each determination. A natural extension of this work will be to follow the colloidal changes in blood due to the absorption of the products of the destruction of a tumour in a patient who is being treated with radium. In this way help may be obtained in prognosis and in judging the dose a patient will tolerate. The Committee of the Christie Hospital has recently received a gift of £1,000 to be devoted to research work, and it is hoped shortly to start a cancer research fund in Manchester. Investigations are being carried out at the Cancer Research Laboratory at the University on the metabolic functions of patients suffering from cancer and also into the chemistry of tumours. Considerable interest has been aroused in the question of the incidence of scrotal cancer among cotton-spinners in Lancashire. A paper on this subject by Mr. A. H. Southam and Mr. S. R. Wilson was published in our columns last November (page 971). Their attention was called to the matter by cases observed at the Manchester Royal Infirmary. They made some inquiries at a Manchester cotton mill; further investigations are in progress, and experimental work is under consideration with a view to getting this condition scheduled under the Workmen's Compensation Acts, if it should be proved to be due to the occupation. Statistics show that the death rate from cancer is steadily on the increase in Manchester, the annual increase being nearly 4 per cent. In a period of thirty years the death rate from this cause has doubled, and deaths are occurring at an earlier age. It is held that the hope of the future lies in research. Men and the brains can, we are assured, be found at Manchester to proceed with this work if more money is forthcoming.

LIVERPOOL.

There has been in existence in Liverpool for some time a committee for cancer research consisting of business men and scientists working in close association with the University. It has secured the services of the best men in all departments—chemical, biochemical, pathological, medical, and surgical—either as whole-time or part-time workers, and has the necessary laboratories with accommodation for animals and other equipment, and also the command of clinical beds necessary to enable it to conduct its inquiries. This small but well equipped and self-contained body is prepared to carry on the piece of work it has undertaken. It is entirely due to the initiative of Professor Blair Bell, who recently published a preliminary statement, giving his reasons for believing that lead salts possess an inhibitory action on the growth of malignant cells. He pointed out the practical difficulties and dangers which necessarily accompany the use of these toxic substances in treatment. Lead salts have, however, already been used on many occasions during the present inquiry, and those who have been closely associated with the treatment throughout are impressed with the belief that lead undoubtedly has a destructive action upon cancer cells. A preparation has not yet been found which can be pressed sufficiently to make the treatment specific. Some cases have yielded striking results, though the investigators as yet hesitate to speak of them as cured; many others have responded, but not to the extent of cure, and in some the toxicity of the remedy has been a difficulty. The Liverpool Cancer Committee has scope in Liverpool for a definite and, it is believed, important research, and it has a very enthusiastic body of men prepared to do their utmost to carry it to a successful conclusion, if that be possible. A good income is guaranteed for the next two years.

ABERDEEN.

In 1907 Sir Alexander McRobert, Cawnpore, India, established the Georgina McRobert Fellowship at Aberdeen University, for the investigation of the cause, prevention, and treatment of cancer. In 1916 this fellowship, as a result of a further gift from Sir Alexander McRobert, was merged in a larger foundation, the McRobert Lectureship in Pathology, with special reference to malignant diseases. The first appointment to the lectureship was made in 1920. Accommodation for a laboratory and funds for its equipment were provided by the University of Aberdeen, and work has been in progress since 1921. The staff consists of Dr. John Cruickshank, the lecturer, and one assistant, Miss J. L. Lockhart. The annual income from the trust is not large enough to allow work on a large scale to be undertaken. During the last two years the production of cancer in animals by the application of tar and other substances has been investigated. The results of this work have in part been communicated to various societies, and will shortly be published in full. A study of some of the biochemical activities of cancer cells as contrasted with normal cells has also been attempted. In this work Dr. Cruickshank has been in close association with the Imperial Cancer Research Fund. The scope of the laboratory work has been extended by the loan of radium from the Medical Research Council to Aberdeen Royal Infirmary, and to facilitate clinical research work Dr. Cruickshank has been appointed to the honorary staff of Aberdeen Royal Infirmary as Director of Radium Therapy and Research. Dr. D. W. Berry, a part-time worker under the Medical Research Council, is associated with Dr. Cruickshank in the investigation of the clinical effects of radium treatment, and assists in the laboratory work on malignant diseases.

GLASGOW ROYAL CANCER HOSPITAL.

The Research Department of the Glasgow Royal Cancer Hospital is directed by a Research Committee of five, consisting of three medical men and two laymen. The medical men are Sir George Beatson, Dr. Robert Muir, professor of pathology, and Dr. Noël Paton, professor of physiology in the University of Glasgow; the lay members are the Chairmen of Directors of the Hospital and of its House Committee. The Research Department was broken up by the war, and, owing to want of money, has only been re-established during the last two years. As soon as funds were available the chemical branch of the work was set in order under Mr. Currie, a biochemist. At present efforts are being concentrated on the biochemical features of cancer; last year Mr. Currie published a paper in the *Journal of Pathology and Bacteriology* on the condition of the fat in cancer patients, especially in the vicinity of the growth, and Sir George Beatson published in the *Lancet* a paper on the possibility of a pigmentary origin of cancer. Mr. Currie is also working at tar cancer in mice and studying the respective frequency of its occurrence under the different pigments of coal tar and the susceptibility of different coloured mice to develop the disease. Dr. Primrose is also working in the department, investigating in particular the internal secretions in relation to carcinoma and the growth of cancer tissue *in vitro*. A proposal has been made to the Committee of the Glasgow Hospital to co-operate with the appeal, but it will not come to a decision until after it has considered the views of its Research Committee.

THE MEDICAL RESEARCH COUNCIL.

A great deal of valuable research into the nature and treatment of cancer is being carried on in various centres with the assistance of the Medical Research Council. Grants are made towards the cost of inquiries now in progress at the Middlesex Hospital, London, by Dr. James Young at the Royal Infirmary, Edinburgh, at St. Mark's Hospital, and at the Glasgow Royal Cancer Hospital, as mentioned above. The Government has entrusted to the Council for medical research purposes nearly 5 grams of radium bromide recovered from military uses; the whole amount was lent in the first instance to workers at the Middlesex Hospital to carry out a series of initial experiments and therapeutic trials, and the results were published in one of the Council's Special Reports. Later on the whole supply was divided

and fractions allotted to a number of hospitals in England, Wales, and Scotland. Research committees have been established at the different centres, and the Council has appointed a central radiological committee, of which Sir Cuthbert Wallace is chairman, and Professor Sidney Russ, D.Sc., of the Middlesex Hospital, secretary. An important fraction of the radium is in use at the Middlesex Hospital, where it is being used both clinically and for pathological and physical investigations. At University College Hospital, London, the radium has been employed chiefly in the treatment of malignant disease of the uterus and of menorrhagia. The quotum supplied to St. Bartholomew's Hospital has been employed in the treatment of carcinomata of the uterine cervix, and the treatment of malignant growths of the nasopharynx, larynx, and oesophagus. At King's College Hospital the radium has been used for the treatment of cancer of the uterus and breast, rodent ulcers and naevi, and it has also been made available for experimental work on the effects of radiation on the body tissues, for which purpose the Council makes a grant for a part-time assistant. The fraction in use at the London Hospital is being applied to the treatment of diseases of the skin and of malignant diseases of the uterus. Other fractions have been allotted to the King Edward VII Hospital, Cardiff, and to the General Hospital, Birmingham, where observations are now being made. In all instances the observations on the effect and treatment are carefully controlled, and recorded with scientific precision. Reference is made above to the radium lent to the Aberdeen Royal Infirmary. One of the earliest allocations was to the Irish Public Health Council, under whose supervision radium emanation, prepared from a central laboratory in Dublin under the direction of Professor J. Joly, F.R.S., is issued to certain hospitals and private practitioners, and records are kept of the results obtained. A fraction has also been allotted for experimental purposes to the Radium Institute, London, where Dr. J. C. Mottram is studying the effects of radiation upon the testes, the pituitary gland, the thyroid glands, and the blood platelets, and upon fat absorption in the intestine. Dr. William Cramer and Dr. A. H. Drew of the Imperial Cancer Research Fund have been associated with Dr. Mottram in part of this work, and the Council has made a grant to Dr. A. N. Kingsbury of the Middlesex Hospital for co-operation in some bacteriological problems that have incidentally arisen. Finally, a fraction has been allotted to Professor Sir Ernest Rutherford, F.R.S., for experimental work at the Cavendish Laboratory of the University of Cambridge.

An inquiry is being made by the Statistical Department of the Council into the incidence of cancer in different trades. The Registrar-General has for this purpose made available data referring to 46,235 deaths from cancer among males, both occupied and retired, occurring in over 900 trades and professions in England and Wales during a given period. Particulars are thus being obtained for each trade as to the type of cancer, the site of the growth, and the age distribution among occupied and retired males. The analysis is being made by Dr. John Brownlee, director of the department, in collaboration with Professor E. L. Collis.

Foreign Countries.

The desire to attack the problems of cancer by intensive research has not been confined to this country. In the United States the most important organization is the Crocker Institute of Cancer Research at New York, which is now a department of Columbia University and produces very valuable work. It was in this Institute, for example, that the experimental production of sarcoma of the liver was accomplished in rats by the transmission of *Taenia crassicollis*. The laboratories are under the direction of Dr. J. C. Wood and Dr. William Woglom. Under their auspices is published the *Journal of Cancer Research*, the only special journal on the subject in the English language. We ought also to mention the Research Institute at Chicago, where the important experiments of Miss Maud Slye and Dr. Gideon Wells on the heredity of mouse cancer have been conducted.

France is badly off for specialist institutions dealing with cancer research; there are a few scattered places, but nothing adequate. The most efficient, perhaps, is the Hospice Paul Brousse, of which the director is Professor G. Roussy, an able and energetic pathologist, whose recent experimental work has attracted favourable attention. The Association française pour l'étude du Cancer, founded in 1906, is a voluntary organization of pathologists and clinicians interested in cancer; it makes a gallant attempt to stimulate public interest and has a very distinguished list of members, both French and foreign. Its proceedings are recorded monthly in a *Bulletin* which contains the papers read at its meetings and short abstracts of foreign literature. Under the guidance of its secrétaire-général, Professor Roussy, it has become a most important journal and is probably now to be considered the premier organ of cancer research. It is publishing an atlas of beautifully drawn histological preparation of all kinds of tumours, which may possibly be the standard work of reference on the subject. The French Association has arranged to hold a congress in Strasbourg on July 23rd and 24th in connexion with the Pasteur celebrations there. The first subject for discussion—the experimental production of cancer—will be introduced by Professor Borrel of Strasbourg University, and continued by Professor Fibiger of Copenhagen, Professor Ichikawa of Japan, Dr. J. A. Murray, Director of the Imperial Cancer Research Fund, London, Dr. Archibald Leitch, Director of the Cancer Research Institute, London, and Dr. Pentimalli of Naples. The other subjects to be debated are the local and clinical reactions to cancer, and treatment by radium and x rays of epithelioma of the skin and mouth.

In Germany ambitious plans were made previous to the war, and a special institute of experimental research in cancer was established at Heidelberg under the direction of Professor Czerny; it is an association with a home which receives patients suffering from or suspected to be suffering from cancer, or from tumours of other kinds. It was reported that some well known pathologists originally associated with the project withdrew, believing it probable that fruitful results were little likely to be reached until more was known of the structure and physiology of the healthy cell. Since the war the institute has been placed under the directorship of Professor Sachs, a former assistant of Professor Ehrlich, though Dr. Teutschländer seems to have carried out most of the experimental work on the genesis of cancer. Dr. R. Bierich presides over a small cancer research institute at Hamburg. Owing to the economic conditions prevailing in Germany, research work has suffered, and in no department more than cancer investigations. The Germans publish regularly the *Zeitschrift für Krebsforschung*, a well known though somewhat heavy journal of international repute.

In Holland a young and promising laboratory has been in existence for two or three years, conducted under the auspices of the Netherlands Cancer Investigation Society by Dr. H. T. Deelman. It was here that last October a small band of enthusiasts met round a laboratory table and submitted to each other their recent experimental investigations in malignant disease. They agreed to form a friendly society which, at the suggestion of Dr. Archibald Leitch, was, out of compliment to the Dutch hosts, named the "Leeuwenhoek Vereeniging." We understand that the members are in constant communication and indicate to each other the particular lines of investigation they are pursuing. The Society consists of Drs. Fibiger, Bang, Murray, Leitch, Rotgans, Deelman, Roussy, Peyre, Bierich, Teutschländer, Lipschutz, and Bloch.

THE fifth French Congress of Orthopaedics will be held in Paris on October 12th, when the following subjects will be discussed: (1) Pes cavus, introduced by M. Laroyenne of Lyons; (2) bone cysts (exclusion of hydatid cysts), introduced by M. Roederer of Paris; (3) congenital elevation of the shoulder, introduced by M. Delchef of Brussels.

A PUBLIC appeal is being made for funds to extend the National Library for the Blind in Westminster. The library began on a small scale in 1882, and has grown (including the Northern Branch at Manchester) to a collection of some 92,000 volumes in Braille and Moon types. The bulk of the volumes (14 in. high, 11 in. broad, 2 in. thick, and 5 lb. in weight), in addition to their cost, precludes the blind reader from possessing an adequate private library, and the National Library dispatches daily over a ton of literature to readers at home and abroad. Donations should be addressed to Captain Lachlan Maclean, National Library for the Blind, Tufton Street, Westminster, S.W.1.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, NEWCASTLE-ON-TYNE.

OPENING OF NEW BACTERIOLOGICAL DEPARTMENT.

THE new building recently erected by the College of Medicine for the Department of Bacteriology was opened by Sir Frederick Andrewes, M.D., F.R.S., on the afternoon of May 25th. The ceremony was attended by a large number of people, including many members of the medical and dental professions, the members of the councils of Armstrong College and the College of Medicine, the Principal and heads of departments of Armstrong College, and the President, staff, and undergraduates of the College of Medicine, as well as by many men prominent in the public affairs of the district. The guests were received by Sir David Drummond, M.D., D.C.L., LL.D., President of the College of Medicine, in the King's Hall of Armstrong College, and, after being entertained at tea, adjourned to the Physics Theatre, where an address was delivered by Sir Frederick Andrewes.

Sir DAVID DRUMMOND offered a hearty welcome to Sir Frederick Andrewes and the visitors who had assembled to take part in the function. He explained why a new building was found to be necessary, and why it had been erected upon a site in connexion with Armstrong College rather than upon the site at present occupied by the College of Medicine. The accommodation in the latter had fallen short of the requirements, especially in so far as the more technical and practical sections of the curriculum were concerned, and the pressure had been felt most acutely in the department of bacteriology. The Council of the College in 1918 appointed a committee to consider the best method of meeting the requirements, and various proposals were made, amongst them to build upon the present College of Medicine site, but this was found to be impracticable on account of want of space. The Council of their sister college, Armstrong College, then made the magnanimous offer of a site adjacent to the agricultural department, and further offered to advance the capital necessary for the erection of the building, stipulating only that they—Armstrong College—should be consulted as to the design and structure of the building, so that it might readily be converted to their needs when the College of Medicine found themselves able to erect the new college upon the site recently acquired by the two colleges in Queen Victoria Road, next to Armstrong College and opposite the Royal Victoria Infirmary; the College of Medicine to rent the building and so to pay the interest upon the capital. This most generous offer was accepted by the Council of the College of Medicine with thankfulness, and he, as President, took the present opportunity to announce publicly the great debt of gratitude they owed the Council and their colleagues of their sister College, by whose liberality and generous outlook they—the College of Medicine—had been relieved of much of the inconvenience from which they were suffering from overcrowding. The University of Durham and the city of Newcastle-upon-Tyne had thus acquired a most important educational development in the shape of what, he ventured to hope, Sir Frederick Andrewes would find to be one of the best bacteriological departments in the country.

SIR FREDERICK ANDREWES'S ADDRESS.

Sir FREDERICK ANDREWES, in outlining the place of bacteriology in the arts and sciences of the present day, said that to make the position of bacteriology clear, it was needful first to consider a little of the history and development of that science. Probably the first human eye which distinctly saw the organisms now known as bacteria was that of the great Dutchman, Leeuwenhoek, often spoken of as the "father of microscopy." This was nearly 250 years ago, and to Leeuwenhoek, and indeed to his successors for more than 150 years, they were merely objects of interest and wonder. They were regarded as animals, and with improvements in the microscope it was found that they varied in size and shape, so that Ehrenberg in 1888 was able to distinguish four different types. It was not until after the middle of the nineteenth century that their vegetable nature was established. During the nineteenth century the foundations of bacteriology were laid. Two great discoveries opened men's eyes to the fact that these insignificant specks of living vegetable matter were after all of serious importance to man. It was found that they were the causes of various fermentations, and that they might be the causes of infectious disease. It was not until the rise of chemistry that the nature of fermentation could be understood, and then the microscope revealed that the mysterious substance which, when added to the fermentable material, initiated the chemical changes, owed its power to the presence of micro-organisms. An even more important impulse was given by the discovery of the relation of micro-organisms to infective disease. As early as 1825 a silkworm disease known as "muscardine" was found by Bassi to be due to a fungus, and in the following decade the parasites of favus and ringworm were discovered. The first bacterial disease to be identified was anthrax: the infecting agent was seen in the blood of infected animals by Pollender in 1849 and by Davaine in 1850. Of all the great names which stood out in the nineteenth century that of Pasteur must take the first place in connexion with bacteriology. For his chief claim to immortality was not that he was a great chemist—as he was—but that he founded a new science. Pasteur transformed bacteriology into an experimental science. He was the first to cultivate bacteria artificially and to bring them into the domain of the laboratory. The second great name in bacteriological science was that of Robert Koch. The principles of most of our modern methods were owed to the technical genius of Koch, who devised the means of culture on solid media and enabled the bacteriologist to make certain of the purity of his growths. No difficulties seemed too great for this man to overcome, as was well shown by his discovery of the cause of tubercle.

It was on the medical side that bacteriology first developed. As the new methods of study began to be applied, the actual causal organisms of the various infectious diseases which scourged mankind had been one after the other unveiled. The earliest discovered causes of infectious disease were fungi of a higher group than the bacteria, and for the causes of many diseases which in the most modern times received their explanation it had been needful to go still further afield. The first new light came from workers on tropical diseases. As early as 1880 Laveran had found the malarial parasite, which was shown to be a member of the animal kingdom, while before this a trypanosome had been found in rat's blood. Obermeier, too, had found in relapsing fever the spiral organism now bearing his name, though the exact nature of this and similar microbes was still a matter of some dispute. It soon became clear that some important tropical diseases were due to animal micro-parasites and others to organisms which could with certainty be referred either to the animal or to the vegetable kingdom, and which were grouped by Haeckel under a new kingdom—"Protista." Nor did matters stop there, for in recent years evidence had been brought forward to show that many specific fevers were due to viruses invisible or almost invisible under the microscope, and capable of passing through the pores of a filter so fine as to keep back ordinary bacteria. Bacteriology had to change itself into microbiology. The younger sciences of protozoology and protistology where now beginning to claim their own separate places in the field. Presently came a time when workers turned to the effects of pathogenic bacteria on the human and animal body. In particular they asked why some men and some animals were susceptible to a given infection and others immune. Pasteur himself had opened up this field of inquiry in relation to anthrax and rabies. But the mechanism by which immunity was produced was still obscure. Fortunately, the subject lent itself to the experimental method. First in the field was Metchnikoff, whose brilliant researches on the comparative pathology of inflammation led him to lay great stress on the destruction of invading bacteria by certain cells of the body, notably the leucocytes of the blood. It was now known that Metchnikoff was largely, but not wholly, right in this idea; phagocytosis seemed to be the main defence of the body against certain bacteria, but his doctrines soon suffered eclipse, owing to the discovery of the power of the fluid elements in the blood of an immune animal. It was even

found that the body fluids might become "antitoxic." Yet another science was thus founded—the science of immunology. It could now be affirmed that the body had many different means of defence.

What practical results had emerged? So far as medicine was concerned, any doctor would give an answer. Bacteriology had become an integral part of all that section of pathology—fully a half—which dealt with infective processes. The physician would say that without the knowledge of disease which had accrued from bacteriology, he would be still working by rule of thumb in a large part of his practice. What physician would fail to seek the help of the bacteriologist in a doubtful case of diphtheria, or neglect the use of antitoxin in the treatment of that disease? Ask, again, any surgeon what value he set upon aseptic methods in his art and what judgement he had formed of Lister's work in this respect. The name of Lister was honoured throughout the whole world. And what was true of surgery was true of obstetrics. It was all the outcome of bacteriology. While a multitude of diseases were not bacterial, it would scarcely be disputed that, directly or indirectly, bacteriology had saved more lives than all the other sciences combined. In the prevention of disease bacteriology performed two different services: it was able to trace the ways in which infectious diseases spread and to introduce measures by which human beings could be immunized. Once the infecting agent in any disease had been ascertained its distribution in nature could be searched out and the channels found by which it reached man. Consider the change in outlook when it was shown that malaria was exclusively transmitted by the mosquito, typhus by the louse, and plague habitually, though not invariably, by the rat flea. Certain diseases were known to be sometimes water borne, some were spread by milk, others by shellfish and other foodstuffs; in all such cases the services of the bacteriologist were invaluable. But the greatest service the bacteriologist had rendered was the attention he focused on the human carrier of infection. It was now known that many human beings might become so far immune that they were capable of harbouring and, what was worse, of disseminating the infecting agents of certain diseases in a fully virulent condition: the bacteriologist alone could detect these dangerous people.

Sir Frederick Andrewes then spoke of the service which immunology furnished to preventive medicine in devising means for rendering a population immune to certain diseases—at least for a time. The experience of the war was conclusive as to the vast reduction in the incidence and mortality of typhoid as the result of preventive vaccines and as to the marvellous diminution of tetanus which followed the serum treatment of the wounded. Yet, notwithstanding the attention which their importance had attracted, probably not one in a hundred of the existing species of bacteria bore any relation to disease. Take the process loosely described as fermentation: sometimes it was of importance to prevent such chemical changes, as in the preservation of food; in other industries it had proved possible to utilize the chemical powers of bacteria. Nature worked more economically than art, and the chemistry of these minute organisms was more subtle than that which the laboratory could accomplish. But it was in agriculture and allied industries that some of the most important applications of bacteriology were to be found. In the front rank stood the discoveries of the nitrogen-fixing powers of certain bacteria, especially well seen in the root nodules of leguminous plants, whereby the importance of these in the rotation of crops received a rational explanation. Again, milk was a particularly favourable medium for the growth of bacteria, so that the whole dairy industry was deeply concerned in questions of bacteriology. Thus bacteriology was a subject of high industrial importance, fully worthy of careful study even if it had no application to medicine. It must be taught in two stages. First must come the academic study of its general principles. For this purpose the situation of the laboratories opened to-day seemed admirably adapted, and the University might congratulate itself on such provision for the teaching of the subject. The second stage of teaching could only be carried out effectively in relation to the special arts and sciences to which bacteriology might be applied. It would be a misfortune if the establishment of the central teaching of bacteriology in that institution led to any divorce from medicine, and he trusted it might have the contrary effect. The medical aspects of bacteriology could only be studied to advantage in close relation with medicine itself.

On the conclusion of the address Sir DAVID DRUMMOND moved a vote of thanks, which was very heartily received, and presented to Sir Frederick Andrewes a key with which he asked him to open the new building.

THE NEW BUILDING.

The building recently erected by the College of Medicine for the department of bacteriology is situated on the north-east side of Armstrong College and next to the building housing the department of agriculture, which was erected largely through the generosity of the late Dr. Clement Stephenson, F.R.C.V.S., in 1912. The building of these laboratories is, as a matter of fact, the first item in a much larger programme which comprehends nothing less than the removal of the College of Medicine from its present situation in Northumberland Road to a site which has been acquired in conjunction with Armstrong College at the junction of Queen Victoria Road and St. Thomas's Street. When this scheme for an entirely new College of Medicine is completed, the University Colleges of the City and the General Hospital will all adjoin each other, with very considerable mutual advantages to everyone concerned.

The building, which has been very skilfully and artistically designed by Messrs. Knowles, Oliver, and Leeson of Newcastle, is of fireproof construction and was built by Messrs. Pringle of Gateshead. It is built of red brick and stone in the style of the late Renaissance, and harmonizes with, though it does not repeat, the design of the buildings about it. The main laboratories are situated on the ground and first floors. Below there is a basement and in the roof accommodation is provided for experimental animals. There is a large and lofty entrance hall into which open a large laboratory to accommodate fifty students or more, a chemical laboratory, three small laboratories for special work, a dark room, and a room fitted as a writing room and office. Access is given by a staircase behind the door to the basement below. The main staircase, which is very well lighted by a large lead-glazed window occupying the whole width of the staircase, leads to the first floor, upon which are situated a large laboratory partly lighted from the roof and fitted for purposes of sterilization and the preparation of culture media, and four other spacious laboratories intended chiefly to accommodate the staff of the department. A small staircase leads from the landing to the animal houses above.

In going through the building the visitor is greatly struck by the amount of light in all the various rooms; yet this has been provided without in any way sacrificing the architectural amenities of the building. Moreover, the laboratories give a sense of loftiness and space. So far as the structure itself is concerned, it appears to be extraordinarily well adapted for the purpose for which it has been built. Considerable attention, too, has been devoted to the finishing of the building. The concrete floors are overlaid with wood blocks; the corners both of walls and floors are rounded, and the walls of the laboratories are tiled with white glazed tiles below and enamelled white above—this latter, of course, contributing materially to the lighting, which is so conspicuous a feature throughout. The benches are, as in the present laboratories, made of pitch pine covered with linoleum; incubators, water-baths, etc., stand on tables covered with asbestos sheets. The cupboards and bookcases are similarly constructed of pitch pine, stained and varnished, and have sliding doors. The animal cages on the top floor are raised some two feet above the floor and consist of reinforced concrete with stout galvanized iron wire tops and fronts. This method of construction was introduced into the College of Medicine some few years ago, and has been found eminently satisfactory in practice, for it allows of thorough cleaning and limewashing. In the basement are cloak rooms, store rooms, boiler house, etc., and a room for heavy centrifuges. The building is heated by steam on the atmospheric system and artificial ventilation is effected by means of an electrically driven fan placed on the roof, the air inlets being behind the radiators. The fan is capable of

extracting 5,500 cubic feet of air a minute, which is equivalent to changing the air of the laboratories four times an hour.

The standard set in these laboratories is high, and if it be maintained in the future the Newcastle Medical School will possess buildings second to none in the kingdom.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

The New Government.

MR. BALDWIN'S Ministry was announced as complete, subject to one office, on May 28th. For a time Mr. Baldwin retains, along with the Premiership, the Chancellorship of the Exchequer, but his hope is that Mr. Reginald McKenna, who is convalescent from a serious illness, will be able to take this position (which has been offered to him) in the autumn. One addition has been made to the Government. Lord Robert Cecil has become Lord Privy Seal, an office which of late was linked with another, but which, having comparatively few duties, will enable Lord Robert to undertake service for the Government in connexion with the League of Nations, and also assist in debate in the House of Commons. Sir William Joynson-Hicks, who was Postmaster-General in Mr. Law's administration, has been made Financial Secretary to the Treasury and is thus available to aid Mr. Baldwin in the passage of the Finance Bill through its stages. Sir L. Worthington-Evans, who went out of office when the Coalition ended, succeeds at St. Martin's-le-Grand. One other change is of special interest to our readers. Lord Eustace Percy, who was Parliamentary Secretary to the Board of Education, has been appointed Parliamentary Secretary to the Ministry of Health, so that Mr. Neville Chamberlain may have assistance in the Commons in his arduous work. The Earl of Onslow, who was Secretary to the Ministry of Health and answered for it in the Lords, is now Secretary to the Board of Education.

Coroners' Law and Death Certification (Amendment) Bill.—This bill, which is designed "to amend the law relating to coroners' law and the certification and registration of deaths and burials," has now been printed. It was presented by Dr. Molloy, and is backed by Dr. Fremantle and Dr. Watts. Broadly it embodies a scheme of death certification based on the policy adopted by the Annual Representative Meeting of the British Medical Association in 1905; with proposals in the Draft Coroners' Bill approved by the same meeting; and the recommendations on burial regulations adopted by the Association in 1905. It is understood that in the present state of business the bill has no prospect of passage this session; but the publication of the text will tend to elucidate matters.

Vaccination at St. Lucia.—In reply to Mr. Rhys Davies, on May 28th, Mr. Ormsby-Gore said that the St. Lucia ordinances relating to public vaccination, which were passed many years ago, did not provide for exemption on grounds of conscientious objection. He had no information as to any legislation or administrative action taken or contemplated by the local Government, but inquiry would be made of the Governor.

Scotland.

FARMER'S RESPONSIBILITY FOR HEALTH OF WORKERS.

AT the beginning of this year a rather serious outbreak of typhoid fever occurred at Campbeltown, in Argyllshire; some two hundred persons were affected, and three died. The *Campbeltown Courier* of May 12th gives a full report of an action raised in the sheriff's court against a local farmer, under the Dairies, Cowsheds and Milkshops Order, for allowing a female worker (who was apparently the cause of the epidemic) to milk cows while suffering from an infectious disease. In the course of the epidemic Dr. Harvey Thomson, medical officer of health for Campbeltown, was able to trace the source of infection to a certain farm, and found on investigation that a woman employed there (whose husband was a scavenger) was suffering from typhoid fever. It was not alleged that the farmer knew that the woman was suffering from an infectious disease. Sheriff Macmaster Campbell, in delivering judgement, said that the facts and conditions were of such a description as to exclude the defence of excusable ignorance. A milk producer dealt with a commodity which was peculiarly and highly susceptible to contamination by the communication of infection. The obvious disability of an employer of milkers to detect the presence of infectious disease in any of his workers should induce care to ensure that his workers were in a sound condition of health, and where a worker was ill reference should be made to a medical man to know whether it was safe or otherwise for the affected worker to proceed with the work of milking. The defendant in the present case should have got from his employee, when she sought to resume work after an illness, a certificate from her medical attendant that she did not suffer from an infectious disease and was otherwise fit to undertake milking. As the defendant was apparently the first person to be prosecuted in Scotland for this offence, the sheriff imposed a modified penalty of £1, with the option of seven days in gaol.

HOME NURSING WORK IN FIFESHIRE.

Viscountess Novar, presiding at the half-yearly meeting of the Fife County Nursing Association at Dunfermline last week, stated that, as a whole, the progress of the Association had been most satisfactory; fifteen new nurses had begun work in the county and four associations had been resuscitated. At the present time the Association had sixty nurses at work in the county, but it was hoped to increase the number to eighty, as there was still a great deal of scope for organizing this service, particularly in the mining districts. One aim of the Association was to secure co-ordination between private nurses, voluntary nurses, and public health work, so as to prevent waste of effort and expenditure. The meeting was also addressed by the Countess of Elgin, who made an appeal for financial assistance.

EDINBURGH SICK CHILDREN'S HOSPITAL.

The sixty-fourth annual meeting of contributors to the Royal Edinburgh Hospital for Sick Children was held on May 17th, Sir John R. Findlay, chairman of the directors, presiding. During the year 1922 there were treated in the wards 2,427 cases, as compared with 2,634 in the previous year; the average daily number in hospital was 108 and the average duration of residence 18 days. Of the total number of patients admitted 1,281 were medical and 1,037 surgical. In the out-patient department 2,811 medical cases and 3,121 surgical cases were treated, and 1,853 minor surgical operations performed. The number of further operations on in-patients was 879. The seaside convalescent home had been fully occupied during the year by 165 children, of whom 126 were medical and 39 surgical. In the medical report the staff expressed the opinion that the effects of unemployment and its attendant poverty had been strikingly manifest, both in the class of case and the condition of the patients admitted to the medical wards during the second half of 1922. Just as towards the close of the war there appeared an unusually large number of cases of tuberculosis, so, after twenty-four months of bad trade, the hospital was now experiencing an increased demand for the admission of patients on account of malnutrition and its results. The chairman stated that expenses continued to decrease and were now £2,000 less than they had been two years ago. There was cause for congratulation on the very handsome contribution made to the hospital funds by employees in offices and public works. Such subscriptions ought to be the mainstay of the finances, whereas legacies had to be drawn on to a very much larger extent than was desirable. This year the hospital had an unprecedented revenue from this source (£18,000).

CARE OF INCURABLES IN THEIR HOMES.

The annual meeting of the Royal Society for Home Relief to Incurables was held in the Council Chambers, Edinburgh, on May 18th. In moving adoption of the report for 1922, which was approved, Lord Provost Hutchison, who was in the chair, said that the society had had a long, honourable, and most useful career. Its work was not confined to Edinburgh, for its beneficiaries were situated in nearly every county in Scotland, and possibly its operations in outlying country districts were even of greater value than in a town, where people suffering from incurable disease could be received and treated in institutions. The society's work originally had been upon a small scale, but every year had seen an increase in its usefulness, till now there were nearly 500 annuitants on the roll. The yearly grant of £10 to each beneficiary was of assistance in securing better attendance and greater comfort. The amount of subscriptions received during the year was £2,176 12s.

Ireland.

SCHOOL MEDICAL SERVICE.

IN the course of an article, specially contributed to the *Freeman's Journal*, a correspondent, "M. B. W.," states in connexion with the medical inspection of school children in Ireland, that even to the casual observer a vast amount of child suffering is apparent; and those who have to do with juveniles, either in or out of school years, know how long is the average standard of fitness. Defective vision and hearing, decayed teeth, adenoids, enlarged tonsils and other forms of throat and nose troubles, minor skin ailments—all these are apparent, and he who runs may read. There are the more serious ailments, such as heart or chest trouble, spinal complaints, and—most serious of all—the various forms and stages of tuberculosis which are operating amongst the children of school age, unchecked because unsuspected, and unsuspected because the machinery for their detection does not exist.

How many parents (the writer asks), even among those of education and experience, can detect with certainty the first signs of incipient disease? How much less able are those already overburdened mothers whose lives are little else save a ceaseless struggle against poverty and bad housing, and who are, at best, ill equipped for the struggle? The day has gone by when we could afford to believe that every woman was, by virtue of her womanhood, a suitable mother; and by virtue of her motherhood, a capable mother. We know now that the rearing of healthy children is the result, not of unaided instincts, but of knowledge, often painfully, always with difficulty, acquired. Where that knowledge is lacking, the result is suffering in one form or another; and it is the innocent victims who pay the price; but the community at large foots the bill ultimately in the shape of hospitals, sanatoria, lunatic asylums and prisons.

The case, therefore, for the medical inspection and treatment of school children rests primarily upon the needs of the children themselves. In the words of Sir James Craig, "A large proportion of the children attending the national schools are suffering from preventable and remediable disease; and an important fact to comprehend . . . is that many defects are unrecognized either by teachers or parents." It is in this fact, that the diseases are preventable and remediable in the main, that the chief strength of the children's case lies. Not every defect is curable; but at least the chance should be given to every child that if there is a defect it should be discovered in time. One at least of the tragedies of after-life can be removed—the tragedy of finding out that ill-health could have been prevented had the trouble been discovered and treated in childhood.

WEXFORD LOCAL MEDICAL COMMITTEE.

A meeting of the medical practitioners of County Wexford was held recently at Enniscorthy. The question of the inadequacy of the salaries paid to medical officials in County Wexford was considered, and, after being fully discussed, it was proposed and passed that the following resolution in the form of an application be sent to the County Board of Health:

> "That the salaries of the dispensary medical officers of the dispensary districts in County Wexford, and the salary of the physician to the County Home in Enniscorthy, are inadequate, and we ask that the salaries of the dispensary medical officers be fixed at £300 per annum, rising by £5 yearly to £400, and that the salary of the physician to the County Home be fixed also at £300, rising by £5 yearly to £400—both scales to be retrospectively applied."

A letter was read from Dr. Hennessy drawing attention to the complaints which are being made by the approved societies regarding the irregular and unsatisfactory manner in which certificates for sickness benefit are occasionally issued. The following resolution was passed unanimously:

> "That the medical practitioners of County Wexford urge that medical certifiers should comply with the regulations issued by the Irish Insurance Commission with regard to the issue of medical certificates, and where it is not possible to do so, that an explanation to this effect should be recorded in the space in the certificate for 'remarks.'"

REPORT OF INTERNATIONAL RED CROSS ON IRISH INTERNMENT CAMPS.

The International Red Cross Committee at Geneva has communicated the following note to the press:

> "Thanks to the courtesy of the Government of the Irish Free State a delegation of the International Red Cross has been able to visit the Free State internment camps, in which about 12,000 prisoners are concentrated. The report which the delegation has presented to the International Red Cross Committee proves that so far as the healthy prisoners, as well as the sick and wounded, are concerned, the sanitary conditions of the camps, the nourishment and lodging, are, in general, very satisfactory."

It is understood that the investigation which led to the report took place during the first two weeks of the present month, and was carried out by a distinguished Continental medical authority, who has visited internment camps in various parts of Europe and has the widest experience of this work. It is considered probable that the reports made as a result of these investigations will be published in detail at an early date.

Correspondence.

THE COUNTRY PRACTITIONER.

SIR,—As is truly said in your leading article of May 26th (p. 904), dealing with the under-payment of rural practitioners with small panel lists, it is easier to demonstrate the evil than point out the cure. It may be well, therefore, before seeking for specific remedies, to consider the case on broad principles—principles which should be applied to the whole question of remuneration and not to that of rural practices only.

It will probably be conceded that the best professional work will be done by a man whose income is sufficient to place him above the anxieties and worries of a constant struggle for existence.

What, then, should be the standard of remuneration for general practitioners at large which will attract the right stamp of man in competition with other professions? And within our own profession what yearly income will render life in country practice as attractive as that in the navy or army, or overseas, or in the towns?

Let us take a man of five-and-twenty who has qualified fairly early, spent three or four years learning the practice of his profession under the varying conditions of human existence, broadening his views and learning his world, and who is prepared to marry and settle down to forty years of strenuous, responsible work both of mind and body. During those years I submit he ought to earn an average net income, after paying his taxes, large enough to ensure for himself, his wife, and an average family of four children the following benefits:

(*a*) Rent and maintain a suitable establishment.
(*b*) Feed and clothe himself, wife, and four children.
(*c*) Educate four children.
(*d*) Insure himself against sickness and disablement during his working life.
(*e*) Provide a retiring annuity of £600 a year for himself at the age of 65, and for his wife if she survives him.
(*f*) Provide an annuity of, say, £100 a year for one child after his death—this on the assumption that on an average one child out of the four will require assistance.
(*g*) Provide the expenses of a holiday of six weeks a year.
(*h*) Provide for some personal expenses.

Now let us try to put a value on these charges for a man living in a completely rural district—I will not do so in detail, as the calculation, though interesting, is too long and complicated for a letter—but spreading education expenses over the whole forty years, providing for *d*, *e*, and *f* by insurance premiums similarly spread, allowing for a locumtenent during his holiday, and £100 a year for his personal expenses, such a man will require about £1,350 a year after paying all wholly professional and travelling expenses and income tax.

Generally speaking all over the rural districts the insured population is about one-third of the whole, and assuming, what is not quite the case, that the mileage allowance and the 2s. for drugs meet the expenses under these heads, we may take the capitation fee as a net figure. To provide its share of the requirements of the rural practitioner the Insurance Fund should pay about £450 a year; to this must be added at least £50 to cover income tax, so that about £500 should be the share that ought to be borne by the National Health Insurance Fund if a rural practitioner is to be put on anything like an equality with other men of his own professional standard. This means at the present rate of 11s. (less 1s. 6d. deducted for patriotic purposes) a panel list of some 1,100, which is, of course, far above the available insured population of a really rural district.

I must not be taken to mean that if the insurance authorities do shoulder their proper burden the lot of the

country practitioner will be made equal to that of his town colleagues. The remaining two-thirds necessary to give him a proper income will still have to be made up out of a rural population engaged in a depressed industry—people who are and seem likely to remain, so far as money is concerned, in a state of chronic destitution. For this two-thirds he must wait for better times, better organization of rural contract practice, and perhaps better pay for Poor Law work; but because the proper figure is unattainable I see no reason why it should not be stated fully, and why the Government should not be called upon to do its share towards solving the problem.—I am, etc.,

Weyhill, Andover, May 25th. J. P. WILLIAMS-FREEMAN.

THE EDUCATION OF MYOPES.

SIR,—I have read Mr. Harrison Butler's excellent lecture on refraction with much interest, and with the greater part of it I am in entire agreement, but I am a little puzzled by one sentence about the treatment of myopia in children. Mr. Butler says: "In my private practice I allow myopes to continue their education, but I forbid music and novel reading." Why this ban on music? I am a myope myself to the extent of 4½ dioptres, and I may, perhaps, claim to have some practical acquaintance with music (piano and organ), but I cannot say that I have ever found that reading music was more trying to the eyes than reading a book—rather, perhaps, if anything, the reverse. If a short-sighted child has a real talent for music it would be positively cruel, and in my judgement quite unnecessary, to interfere in any way—not even excluding "examination training"—with the pursuit of what is and always will be to that child probably the greatest delight of its life. In the very rare cases where such interference or prohibition might be considered desirable it would surely be necessary also to stop entirely all reading and writing for a time. I am glad to see, however, that Mr. Butler says: "The objections to the theory that myopia is due to close work *per se* are to my mind conclusive."

Incidentally I would remark that, in my opinion, a moderate degree of myopia is a positive asset to an ophthalmic surgeon, as, when about to operate on the eye, he takes off his glasses because he sees better without them, and that is why I think he has the advantage over a hypermetropic, astigmatic, or presbyopic surgeon, who may be obliged to wear glasses in his operative work.

With regard to the wearing of glasses for reading in cases of a moderate degree of myopia—say up to about 3 or 4 dioptres—I have always left it to the patient to do as he or she likes. In my own case I have sometimes found it a relief to read with glasses, but much more frequently I have found myself, all my life, reading without them.

I think that the majority of medical men, including ophthalmic surgeons, are apt at times to be a little too dogmatic and too rigid in the advice they give to their patients, for we must all remember that, as Mr. Butler truly says, "the object of refraction is to make the patient comfortable, not the solution of a problem in optics."—I am, etc.,

Gloucester, May 21st. E. DYKES BOWER.

SIR,—I do not propose to open a general discussion upon the relative merits of the many theories which have been advanced to account for progressive myopia; the subject is far too abstruse to be of general interest, and one more suited for treatment at a meeting of ophthalmologists than in the correspondence columns of the JOURNAL. I am in full agreement with Mr. Bishop Harman that rapidly advancing cases of progressive myopia require very special treatment, and that they are unsuited for any employment that calls for constant confinement indoors. At Coventry we try to educate such children in an open-air school, which has many advantages over an indoor school of the ordinary type. On the other hand, we must not forget that many of our most eminent citizens are high myopes, and it is doubtful whether they would have attained the position they hold had their elementary education been restricted. It seems to me that it is a great mistake to lay down an arbitrary standard of refraction as a qualification for holding a scholarship. If a child has been carefully examined from time to time, and has been found to have a steadily increasing myopia, then it is right and proper for the State to consider him unsuitable to hold a scholarship; but the mere fact that he has 3 dioptres of myopia should not be a disqualification *per se*. In a certain proportion of children myopia becomes stationary, or at most reaches about 5 dioptres, and our universities would be deprived of many of their most learned professors had Mr. Harman's standard of education been applied to them.

As regards music, my lecture has suffered from the condensation necessary for publication, and I may not have made my view quite clear. In my private practice I see many clever children who are being educated at secondary schools, and who are suffering from slowly progressive myopia. The question arises, What is to be done with them? Is education to be given up, and are they to become hewers of wood and drawers of water? My answer is, certainly not. Some may become eminent men and women in spite of their disability. I find that in the case of girls many of them are working for examinations and at the same time practising the piano an hour a day and spending all their spare time reading novels. I advise that all extraneous reading must be given up in term time, and a choice must be made between music and examinations. If the child is likely to become a real musician let her give up examination work and take up music, but I forbid both. Novel reading must be reserved for the vacations. The main consideration is that the myopic child shall be encouraged to spend all spare time in the open air. The average myope is naturally studious, and is not disposed to games. This tendency must be resisted. Above all, a long rest is necessary after any debilitating illness.

As regards "current theories," the mere fact that a theory is "current" leaves it still a theory, and a fit subject for "cock-shies." Even the established and "current" theories of light and gravitation are being "tilted" at, and the German-made theories of myopia are not sacrosanct. In common with many other ophthalmologists I do not believe that close work *per se* is the cause of progressive myopia, but I am quite willing to change my opinion if the weight of evidence, carefully sifted and scientifically tested, conclusively points in this direction.—I am, etc.,

Birmingham, May 25th. T. HARRISON BUTLER.

PERNICIOUS ANAEMIA.

SIR,—May I say at once that I welcome the letter of Dr. Gordon Ward, because I recognize him not only as a clinician of experience but as a skilled haematologist, and his contributions to haematological literature are well known. I would, however, assure him that I have had some clinical experience, and my book *Haematology in General Practice* was largely the outcome of the combined clinical and haematological study of a number of cases of anaemia from various forms of sepsis in hospital practice. I would not, therefore, like to be labelled as taking the exclusively pathological point of view. I have dealt with the whole question in my book, but I may perhaps briefly summarize my conception of the problem as follows:

In almost all forms of grave anaemia the bone marrow is affected by a toxin which is probably, though not certainly, bacterial in origin, the haemolytic streptococcus being, I think, the most usual offender. In some of these the bone marrow is affected beyond repair, in others recovery is possible when the focus has been eliminated and the toxin thereof combated by appropriate methods. The former are commonly classed as "pernicious," and the latter as "septic" anaemia. On clinical grounds alone it is at least very difficult to make the distinction, but if blood films are examined on repeated occasions the lethal type is recognized by the presence and persistence of the following signs: a low total red cell count (below two millions approximately), a colour index above 1, and megaloblasts in fair numbers—approximately 5 per cent. of white cells. In addition, polychromasia and leucopenia with presence of primitive forms of leucocyte are almost invariably present.

I lay stress on the persistence of these signs because I recognize that even in the lethal form periods of remission occur.

I suggest that as between the clinician and the pathologist there should be no question of domination of either, but of co-operation to their mutual benefit. To describe the pathologist as a "specialist in blood films" is an unkindly gibe.—I am, etc.,

A. KNYVETT GORDON, M.B., B.C., B.A.Cantab.

London, W.C., May 19th.

SIR,—Dr. Knyvett Gordon has favoured me with a copy of his letter published above. May I at once make it clear that the implication that he lacked clinical experience was not intended to be conveyed, and is hereby unreservedly withdrawn. As a matter of fact his clinical experience is longer than my own, so that it would ill become me to question it.

But I am still far from agreeing that "pernicious anaemia" is a disease, clinically or pathologically, in which "the bone marrow is affected beyond repair." We differ fundamentally on the point of whether the bone marrow is or is not primarily affected. He thinks that it is. His book (of which he has also been good enough to send me a copy) contains the following: "The pathologist, however, restricts the term [pernicious anaemia] to a destructive lesion of the bone marrow leading to a fatal termination, though short periods of remission may occur." I, on the contrary, have written in my book (which is out of print or I would reciprocate the compliment), "Why the particular blood picture which we associate especially with this disease should follow intravascular destruction of blood is not yet determined, but as far as we know at the present it depends on the rate at which the destruction takes place, and on the presence in the body of the products of blood destruction, which seem to have a particularly powerful influence on blood regeneration." I admit that the view taken by Dr. Knyvett Gordon is, or has been, widely held. But I cannot find that it is consistent with the facts, especially the following facts:

1. That the erythrogenic marrow (assumed to be poisoned) increases greatly in area and activity.
2. That temporary benefit can often be obtained by splenectomy (which, in my view, necessarily diminishes the amount of haemolysis until this function can be assumed by other structures).
3. That the marrow can return to normal during remissions of several years' duration.
4. That no signs of degeneration are found in the marrow which are in any way comparable to those found in other diseases or which exist in the spinal cord, alimentary canal, etc., in this disease. I refer in particular to necrotic changes followed by fibrosis, and to atrophy.

Dr. Knyvett Gordon takes certain signs as criteria, *if persistent*, of "pernicious" and necessarily fatal anaemia. I agree, for one of these is a 2,000,000 red cell count, and no one can survive this indefinitely. But I would ask him whether he can point to any disease or syndrome in which these signs *are necessarily persistent*. Can he point to any disease, in fact, which is necessarily fatal even in the present state of our knowledge? If he cannot, what precise significance is the clinician to attribute to these criteria? There certainly exists a disease characterized in general by glossitis, intestinal lesions, nervous symptoms, which may be profound, and severe anaemia. His criteria are not, in the experience of a great many people, persistent in this disease, although usually present at some time. They are also present with less frequency in other conditions—for example, sprue, some helminth infections, severe sepsis, and cancer. In none of these do they help us in treatment, diagnosis, or prognosis. All that they tell us we can deduce from other indications. I feel that if we should discover next week a cure for what the clinician calls pernicious anaemia (that is, the Addisonian or glossitic anaemia of Hunter) no more would be heard of the significance of "megaloblastic degeneration."

This is where the clinician joins issue with the pathologist. Neither denies that such and such a blood picture occurs nor that such and such a clinical syndrome occurs. Both desire to employ the term "pernicious"; both have, in fact, employed it. But the conceptions to which they apply it do not coincide. They merely overlap. Hence great confusion has arisen, and it is apparent that one or other should give way. I claim, on grounds of priority for the name, and on the further ground that pathology is merely a subsidiary study designed to serve the dominant purposes of clinical medicine, that the pathologist should give way. And when it comes to "pathological diagnosis" I am scandalized at the boldness of the daughter science, which ought but to play her part as a handmaid in the great art of clinical diagnosis, but who, with Dr. Knyvett Gordon's approval, is setting up a system of diagnosis of her own and demanding that the clinician study and admire it.—I am, etc.,

Sevenoaks, May 21st. GORDON WARD.

Obituary.

VAUGHAN HARLEY, M.D.EDIN., M.R.C.P.LOND.,

Late Professor of Pathological Chemistry, University College, London.

WE regret to announce the death of Dr. Vaughan Harley, which occurred very suddenly on May 21st at his country home, Walton Hall, Bletchley, Bucks.

Vaughan Harley was the son of the late Dr. George Harley, F.R.S., and was born December 28th, 1863. He studied medicine at Edinburgh University (bronze medal in pathology) and graduated M.D. with honours in 1886, being awarded the gold medal for the best thesis. The next two years were spent travelling round the world; during that period he worked for a time under Sir Patrick Manson. The succeeding four years were occupied in scientific study in Paris (under Pasteur and Roux), in Leipzig (under Ludwig), Turin (under Mosso), and in Vienna, Budapest, and Christiania. In 1893 the late Sir Victor Horsley invited him to return to London to organize the first department of pathological chemistry in England, in the pathological department of University College, London, and Harley made it a centre of research for post-graduate students. In 1894 he was appointed Grocers' Research Student and held this for four years. When Sir Victor Horsley retired in 1896 Harley was appointed Professor of Pathological Chemistry in University College, London, an appointment he held until 1919. During this period he published a large number of scientific papers and collected a band of enthusiastic workers in the laboratory. He took a keen interest in the incorporation of University College in the University of London and served on the committee engaged in raising the necessary funds. At the Annual Meeting of the British Medical Association held in London in 1895 he was honorary secretary of the Section of Pharmacology and Therapeutics. He was a Fellow of the Physiological Society and of the Chemical Society. In addition to his work as a physician Vaughan Harley was much interested in farming, especially in shorthorns. For the last twenty years he applied scientific methods at his farm at Walton Hall and took a particular interest in forming the herd of shorthorns known as the "Notlaw" herd. He won numerous prizes at all the big shows, the best year being in 1918, when he won the championship, reserve championship, and Maclennan cup at the Birmingham spring show. He was the breeder of numerous prize winners under other names and his animals did very well in the Argentine. His Oxford Downs sheep were also successful in the show yard. In addition, he was a breeder of Shires and large black pigs. In 1911 he was elected a member of the council of the Shorthorn Society and served on it until his death, being vice-president in 1917 and president in 1918. He was also a member of the Shire Horse, Oxford Downs, and Large Black Pig Societies.

Dr. Vaughan Harley married in 1905 Mary, eldest daughter of the late Canon Blagden, and leaves two daughters. He was buried at Walton Church, Bucks, on Friday, May 25th.

R. J. EWART, M.D., D.Sc.,

M.O.H. Barking.

WE regret to have to record the death of Dr. Robert John Ewart, M.O.H. for Barking, Essex. He was a distinguished student of University College, Liverpool, where in 1894-96 he held the Holt tutorial scholarship and the Junior Lyon Jones scholarship. He took the B.Sc. of the Victoria University, with honours, in 1896, and the diplomas of L.R.C.P., M.R.C.S. in 1899, graduated M.B., B.Ch. in

1899, M.Sc. in 1903, M.D. in 1904, and D.Sc.Lond. in 1918. He was senior house-surgeon to the Royal Infirmary, Liverpool. After a tenure of the Holt Fellowship of Pathology in the University of Liverpool he turned his attention to public health, and took the diploma of D.P.H. in 1907. He was first appointed Assistant M.O.H. Middlesbrough and later on to the office he held at the time of his death. He was a member of the British Medical Association and a fellow and member of the council of the Society of Medical Officers of Health. He was esteemed one of the ablest medical officers of health in the country, and it is difficult to understand why he had got no further than Barking Town. "It was," a friend writes, "like putting a race-horse in a four-wheel cab. He was a most delightful colleague, modest and unassuming, willing to take any amount of trouble to help those who asked his aid, and apparently quite unaware that he was a more knowledgeable person than anyone else."

We are indebted to Dr. MAJOR GREENWOOD for the following estimate of the high value of Dr. Ewart's contributions to the literature of public health.

By the death of Dr. R. J. Ewart our profession has lost one of its very small band of enthusiastic statisticians. Ewart's principal statistical work is contained in a series of memoirs published in the *Journal of Hygiene* (xiv, 453; xv, 127; xv, 208; xvi, 12; xviii, 95). His idea was that the age of the parents at the time of the birth of a child affected the latter's physiological characters, that the physiological make-up of a later-born child was essentially different from that of a child born earlier in the fertile period. He surmised that changes in the reproductive habits of the people correlated with the declining birth rate were not without influence upon the evolution and prevalence of tuberculosis and the zymotic diseases. Ewart took up this work in spite of grave difficulties. His data were scanty and he had to begin to acquire a knowledge of the difficult technique of modern statistical analysis at an age when few very busy men—and he was a very busy man—care to tackle a new subject. The data available—mainly collected by himself at Middlesbrough and Barking—were meagre and open to criticisms which none urged more strongly than he did himself. It is not therefore surprising that he failed to establish conclusively any important proposition, although in some matters he created a fair presumption that his views were just. But his papers are full of valuable suggestions from which some later investigator with more material will derive advantage. Incidentally, some of Ewart's memoirs contain valuable contributions to the general statistical study of epidemic disease. I would particularly instance the paper printed in the fifteenth volume of the *Journal of Hygiene* (pp. 208-256), which contains one of the best statistical studies of scarlet fever and diphtheria with which I am acquainted.

It would be very easy for a critic having the advantage of wider training and experience in research, above all having had the advantage of time and leisure, to point the blemishes in Ewart's work. Ewart had very little time to devote to pure science and naturally made some mistakes, as every single-handed worker must. I believe he will be remembered as an original-minded investigator, a real student of nature. Of the keenness and skill with which he carried out his administrative duties others can speak more authoritatively than I, but several members of the staff of the Lister Institute will recollect how he contrived to save the lives of some babies in his district in a time of milk shortage by a pretty application of a scientific idea. He did not live long enough to secure wide recognition, but long enough to prove to all who knew him that they have lost a man worthy of the highest traditions of the public health service.

J. G. OGLE, M.D., B.CH.OXON.,

Reigate, Surrey.

THE announcement of the death of Dr. John Gilbert Ogle, of Reigate, will be received with deep regret by his numerous friends. He was the son of the Rev. J. A. Ogle, vicar of Sedgeford, Norfolk, and came of a medical stock, his grandfather having been Regius Professor of Medicine at Oxford, and his uncle, William Ogle, the well known scholar and physician, who was Superintendent of Statistics in the Registrar-General's department. Dr. J. G. Ogle was educated at Haileybury College, Keble College, Oxford, and St. Bartholomew's Hospital, where he held the post of house-physician to Sir Dyce Duckworth. Afterwards he was house-physician at the Royal Chest Hospital, London, and at the Radcliffe Infirmary, Oxford.

He took the diploma of L.R.C.P. and M.R.C.S. in 1888 and graduated M.A. and M.B., B.Ch.Oxon. in 1889; in 1891 he proceeded to the degree of M.D.

He practised in Reigate from 1891 to 1914 as a member of the old established firm of Ogle, Walters and Pegg, the successors of Holman, Walters, Hallowes and Berridge. When he retired owing to ill health his loss was deeply felt, not only by his partners and colleagues, but also by his many patients and friends. His skill in his profession was only equalled by his great care and kindness. In fact it may truthfully be said of him that he never failed to seize any opportunity for doing kind and generous acts, and he was greatly beloved by all.

Dr. Ogle was twice married, firstly to Miss E. M. Perfect of Lewes, who died in 1919, and secondly in 1921 to Miss Dorothy Hunter.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

APPLICATIONS for the E. G. Fearnside's scholarship for clinical research on the organic diseases of the nervous system must be sent to the University Registrary before June 20th. The scholarship is open to graduates in medicine and to graduates in arts who have passed Part II of the Natural Sciences Tripos.

UNIVERSITY OF LONDON.

A COURSE of four lectures on tropical hygiene will be delivered by Dr. Andrew Balfour, C.B., C.M.G., at St. Bartholomew's Hospital Medical College, E.C., on June 12th, 14th, 19th, and 21st, at 5 p.m. The lectures are addressed to advanced students and to others interested in the subject. Lord Stanmore, treasurer of the hospital, will take the chair at the first lecture.

Medical News.

THE Duke of Connaught will distribute the prizes at St. Thomas's Hospital Medical School on Wednesday, June 13th, at 3 p.m.

THE annual meeting and dinner of the Cambridge Graduates' Medical Club will be held at Gonville and Caius College, Cambridge, on the evening of Friday, June 22nd, with Sir H. K. Anderson, M.D., F.R.S., Master of Caius, in the chair. The honorary secretary is Mr. R. Davies-Colley, C.M.G., M.Ch. (10, Devonshire Place, W.1).

A TWO weeks' refresher course in general medicine and surgery will be given, under the auspices of the Fellowship of Medicine and Post-Graduate Medical Association, at the North-East London Post-Graduate College (Prince of Wales's General Hospital), Tottenham, from June 11th to 23rd inclusive. It will include demonstrations in clinical and laboratory methods with special demonstrations each Saturday at the North-Eastern Fever Hospital and the London County Council Mental Hospital respectively. A clinical lecture will be given every day at 4.30 p.m. A course of eight practical lecture demonstrations on gastro-intestinal diseases of children will be given by Sir William Bayliss, Dr. Bernard Myers, and Mr. E. T. C. Milligan at the "Children's Clinic," Western General Dispensary, from June 11th to July 5th. A special course in neurology will be given at the West End Hospital for Nervous Diseases from the middle of June till the end of July, and should a sufficient number of entries be received courses will also be held in ophthalmology and dermatology at the Royal London Ophthalmic Hospital and St. John's Hospital for Diseases of the Skin respectively. Beginning on June 11th, Dr. Gustave Monod, M.R.C.P.Lond., will give a short course of clinical demonstrations (in English) on practical hydrology at the Thermal Hospital in Vichy. The subjects to be dealt with will be hepatism, gout, diabetes, obesity, etc. Further particulars regarding these courses, copies of the syllabus, and tickets of admission can be obtained from the Secretary to the Fellowship of Medicine, 1, Wimpole Street, W.1.

DR. J. WRIGHT MASON, on the completion of forty years' service as surgeon to the Hull City Police Force, has been presented by the serving and retired members thereof with a silver rose bowl and Mrs. Mason with a gold wristlet watch.

THE next meeting of the North-Western Tuberculosis Society will be held at 3 p.m. on June 7th at the Tuberculosis Offices, Joddrell Street, Hardman Street, Deansgate, Manchester, when Dr. H. de Carle Woodcock (Leeds) will read a paper on the diagnosis and treatment of tuberculous glands. Any medical practitioner interested in the subject is cordially invited to attend.

THE sixth edition of the *Aids to Ophthalmology* by Mr. Bishop Harman has been translated into Polish by Dr. W. H. Melanowski, one of the teachers of the University of Warsaw. The Polish edition makes a book of 300 pages and is printed in good type of rather larger size than the English edition.

THE third and last block of the United Services Hospital at Ascot was declared open by H.R.H. the Duke of Connaught on May 29th, when the whole hospital was thrown open for the inspection of many interested visitors. The funds for this building have been derived from the large profits made by the Army and Navy Canteen Board out of the money expended by naval ratings and army rank and file, and the benefits of this hospital are intended for the children of ex-service men who suffer from surgical tuberculosis. The great experience of the consulting surgeon to the institution, Sir Henry Gauvain, has been freely drawn upon, and the design of the buildings and equipment owes a great deal to the lessons learnt at Alton. The buildings here, however, are of a much more substantial and permanent character than at Alton and at some other "open-air" hospitals, and unlike some of these, the wards can be entirely closed if it is thought desirable to do so. There is accommodation in the three wards for 138 patients, and there are 12 beds in the isolation annexes, making in all 150. The treatment block contains plaster, splint, and *x*-ray rooms, all of which are admirably adapted for their purposes. Nearly all the beds are already occupied and the appearance of the patients showed the good effects of the open air treatment and of such sunshine as our climate has lately allowed us. The country house Heatherwood, in the grounds of which the hospital has been built, now serves as a charming residence for the nurses. The soil is sandy and dry and the situation elevated. The sewage is treated in a disposal plant consisting of a settling tank and filter bed, and the effluent is distributed over fields at a distance from the buildings. The hospital has its own power station and is thus self-contained.

EXPERIMENTS made three years ago indicated that breathing for five minutes daily of air containing small amounts of chlorine acted as a preventive of influenza. Further tests made at the University of Arkansas recently upon nearly 300 persons are stated to confirm this conclusion.

DR. T. S. HIGGINS, M.O.H. for St. Pancras, who (as recently announced in our columns) has been appointed medical officer of health at Cape Town and lecturer on public health at Cape Town University, was presented on May 28th by the St. Pancras Borough Council with a gold watch.

THE second International Congress of Military Medicine and Pharmacy opened on May 28 h at Rome. H.M. the King of Italy and Signor Mussolini, President of the Council, attended the opening ceremony, and General Diaz delivered an inaugural address. The British representatives at the Congress are Lieut.-Colonel D. S. Harvey and Major Dawson.

THE annual general meeting of the Society for Relief of Widows and Orphans of Medical Men was held on May 23rd, with Dr. F. de Havilland Hall, President, in the chair. The annual report which was submitted to the meeting showed that the invested capital of the society now amounts to £146,650, only the income from which may be used for the payment of grants and expenses. £4,407 10s. was distributed in grants during the year, and the expenses were £335. At the present time there are 51 widows and 4 orphans in receipt of relief. Relief is only granted to the widows and orphans of deceased members. Any widow left with an income of £125 or under, and any orphan with an income of £60 or under, is eligible to receive relief. The average relief given is £80 per annum to each widow and £50 per annum to each orphan. Special grants are also made to enable orphans to learn a profession or trade. The society was founded in 1788, and incorporated by Royal Charter in 1864. Membership is open to any registered medical practitioner, who at the time of his election is resident within a twenty-mile radius of Charing Cross. The annual subscription for a member who at time of election is under 40 years of age is £2 2s.; if over 40 but under 50, £3 3s.; and if over 50, £4 4s. There are special terms for life membership. All particulars may be obtained from the Secretary at the offices of the society, 11, Chandos Street, Cavendish Square, W.1. The society is both a provident and beneficent one. Were it not for the income derived from investments the society would not be able to make the grants, as the income from subscriptions about pays the working expenses. These work out at about 6 per cent. of the income.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediocera, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin;* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

ACCIDENT OR ILLNESS?

"PASCE" submits the following question: "Does a septic finger following a scratch, wound, or 'hang-nail,' necessitating opening under general anaesthesia three times and on the third occasion avulsion of the nail, constitute an accident or an illness?"

*** The form of this question is not very clear, but we are advised that if the scratch, wound, or hang-nail arises out of or in the course of employment and if proper notice is given, in all probability there would be grounds for a claim under the Workmen's Compensation Acts. If the condition arises in a private person and he is insured, everything would depend on the terms of the policy. It would perhaps be advisable to consult a solicitor.

LETTERS, NOTES, ETC.

QUININE SALICYLATE.

DR. NINIAN M. FALKINER (Dublin) writes: Many years ago I was requested by a leading consultant in Dublin to prepare some quinine salicylate; this I readily accomplished in the pharmacy of my dispensary. My friend published a note of the incident in the *Dublin Journal of Medical Science*. Since then the insolubility of this salt has come before me, and when occasion permitted I have made rough experiments; the outcome of these was to find that with tinctura quininae ammon. (*B.P.*) and sodium salicylate a permanently clear mixture can be obtained.

℞ Tr. quininae ammon. (*B.P.*)	... ...	m xx
Sodii salicyl.	... ...	gr. x
Glycerini	... ...	ʒ ss
Aquam	... ...	ad ʒ j

Ft. mist.

I presume, although I have not verified the reaction, that a double salicylate of quinine and sodium is formed, soluble in dilute ammonium hydrate. I hope to investigate this further, but there are analogies in Nessler's reagent and Liebig's test for cyanogen to support this view. I have given thi to many of my friends and used it largely during the war in the base hospital to which I was attached, principally in influenza.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 47, 48, 49, 52, and 53 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 227.

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Advertisements should be delivered, addressed to the Manager, 429, Strand, London, W.C.2, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.